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**Archaeological Reconnaissance
in Sonora: by Monroe Amsden**

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Archaeological Reconnaissance in Sonora:

by Monroe Amsden, Director of Field Work

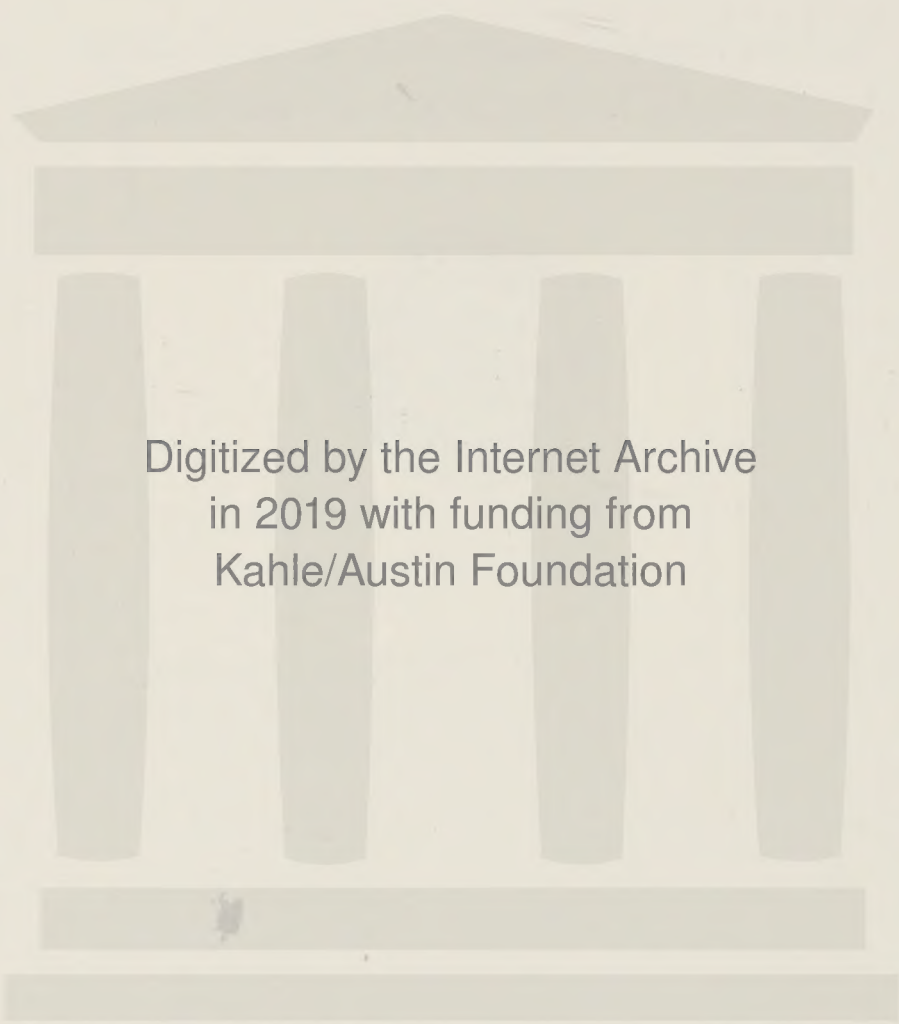


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PREFACE

The reconnaissance described in the following report was begun with no very definite object in view, that is, I merely set out to see what archæological remains were to be found in northeastern Sonora, and to gather, if possible, during the short time at my disposal, sufficient knowledge of the country and of the ruins to formulate plans for more thorough exploration in the future. It was my intention in the beginning, to work intensively as I went along, investigating every site within a few hours' riding distance along either side of the route I had tentatively planned; but it soon became apparent, once we started, that by so doing very little ground would be covered, and the result would be less useful, for present needs, than the information to be gained from the investigating of sites more widespread, though they might not be as many in number. Therefore, I visited only those sites that I could examine in passing without greatly interrupting our progress, thus making the reconnaissance extensive rather than intensive.

Sonora is one of the least known units of the archæological Southwest. Difficulty of access, rumors of lawlessness and (to a certain extent) political barriers have, until recently, conspired to make it undesirable as a field for scientific investigation. No excavation, so far as I know, has ever been undertaken in Sonora, and only two publications, viz.: Bandelier's Final Report (1890) and Lumholtz's Unknown Mexico (1902) have appeared in which its ruins are described.* The greater part of the state is still *terra incognita*.

The report which follows contains two parts. In the first, I have endeavored to give an uncolored account of what we did, what we saw, what we thought during the trip. For this, I have chosen my diary as the most suitable mode of presentation, having in mind the armchair-archæologist who may be curious to know what life in the field is like. The second part consists of a brief technical description of the ruins I found, and, as a scientific treatise, begs to rest upon its merits.

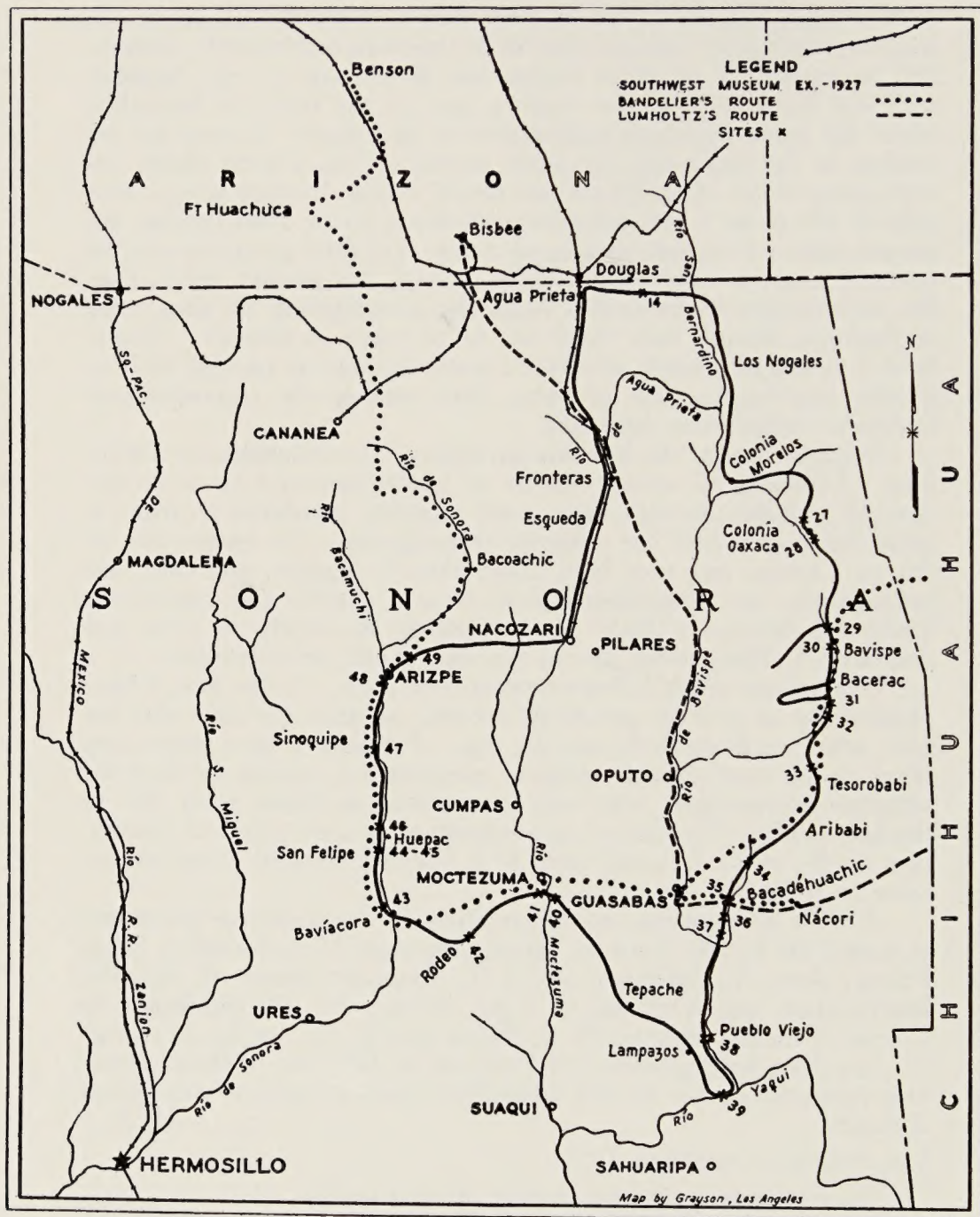
I wish here to express appreciation of the courteous treatment accorded me by Mr. John E. Jones, American Vice Consul at Agua Prieta; Sres. A. Gabilondo and J. E. Tena, in charge of Mexican Immigration and Customs at Agua Prieta; Sr. H. Gabilondo of Colonia Oaxaca; Messrs. D. C. Kinne and E. G. Specht, in charge of American Immigration and Customs at Douglas; without whose help preparations for the trip would have been a matter of very great difficulty.

M. A.

Los Angeles, December, 1927.

*BANDELIER, A. F.—Final report of Investigations among the Indians of the Southwestern United States, carried on mainly in the years from 1880 to 1885; Cambridge University Press, 1892 (In Papers of the Archæological Institute of America, American Series, volume IV).

LUMHOLTZ, CARL—Unknown Mexico; Charles Scribner's Sons, New York, 1902.



PART I

THE TRIP

November 8, 1927.

Mounted on three fairly sorry saddle-horses, driving four sore-backed pack-mules, one of which is twenty-eight years old (and looks it), we left the ranch at Colonia Oaxaca and headed south, up the valley of the Rio de Bavispe. In the lead, rode Morquecho, our guide, looking like Don Quixote might have looked, had that illustrious gentleman been a poor Mexican *peon*. Rosinante, "lean, bony, and unsound," must have been just such an animal as Morquecho's fiddle-headed black mare.

Instead of dressing in the picturesque costume of a gentleman adventurer of Quixote's day, Morquecho wears faded blue denim, so tattered and patched that superficially he resembles a moulting hen, and a pair of officer's leather puttees, at least a generation old, beneath which are a pair of hybrid moccasin-shoes of his own manufacture. Instead of carrying a lance, Morquecho carries a rusty old army rifle, tied longitudinally to his weather-beaten saddle with a saddle-string that he borrowed from me, the rifle being as useless as a lance, since he has no ammunition for it. Behind Morquecho, the mules shuffled along single file through the dust of the road, the old one walking with all the rhythmic solemnity of a grandfather's clock, looking neither to the right nor to the left, the mean one watching out of the corner of her eye for a chance to kick the two younger members of the *mulada*, who (or which) regarded duty as incidental to pleasure, and constantly snatched mouthfuls of grass from the roadside. My young brother George and I brought up the rear.

We forded the river not far above the ranch. I decided it was time to go to work, and climbed to the rim of a *mesita* to look for sites; but the mesquite brush, armed as it was with strong sharp thorns, became so impenetrable that I had to give it up as a bad job. When I overtook the mules, George hinted that, since it was noon, we might stop for lunch. I knew how he felt, and I sympathized with him; but I had to let him know that there will be no lunches on this trip. Stopping to unpack, cook, eat and pack again consumes too much time, and two meals a day are enough for any one—provided they be hearty ones.

Soon we left the valley to follow up a narrow winding little cañon, which came in from the left. Through the loose gravel in the bed of the wash, the mules plodded patiently, their shod hoofs making a pleasant crunching sound. Low cliffs of sandstone conglomerate

reflected the heat of the sun, and raised the temperature of the still air to the roasting point. Near its head, we left the cañon, and climbed a rocky trail up a steep hill, crossed the hill, and continued climbing up and going down until we re-entered the Bavispe valley where the river makes a large horseshoe bend. In one of the rock-walled draws we followed, I saw patches of pictographs of the types common in the Southwest. *Vaqueros* have followed the example of the aboriginal artists by pecking or scratching their initials and brands in conspicuous places. From the fact that the cañon forms a natural, easily accessible pass through the hills, I infer that it constituted an artery of traffic in ancient times as it does today, and that the numerous carvings represent the labor of artistically inclined passersby. I found no traces of occupation anywhere in the vicinity.



Rio de Bavispe near Colonia Oaxaca

Having crossed twice the curving river, we made camp on its bank, and Morquecho drove the stock to a grassy *mesa* to graze during the night. George and I busied ourselves in searching through the packs for this and for that, and having finally assembled the necessary ingredients, cooked our supper. The clear light of the setting sun, striking the high cliffs to the north of us, with their creamy brown face eroded by wind and rain to a semblance of gigantic sculptured columns, threw them into vivid relief against a somber background of mountains. With the deepening of the twilight, our fire died to smoking coals, so that we alternately gasped and ate as the breeze shifted. Morquecho, between gasps and bites, revealed his remarkable conversational talents. After satisfying his appetite

(he is also a remarkable eater), he opened up in earnest, and talked, principally of buried treasure and lost mines, touching upon such topics as his travels, bandits, ghosts, revolutions, concluding with a thrilling account of how he, Morquecho, alone and unaided, licked a sizeable band of Seris so badly that they sneaked away in the dark. The fact that the rifle he used had no sights makes the deed positively heroic. If only Baron Munchausen could have been present to tell another!

Wednesday, November 9.

When I crawled out of my bed this morning to build the fire, it was cold. Fog hung in the valley, and dew made everything I touched feel cold and clammy. George, making a supreme effort, rolled out of his saddle-blankets, stiff in his joints; but Morquecho remained huddled underneath his faded khaki "tarp" until the fire was burning well, then coughed and groaned most miserably as he sat up to roll a cigarette. He says he is getting old.

Packing was a hard task. The panniers all had to be rebalanced and the straps readjusted; the ropes were stiff, the mules restive. George and I did the packing, while Morquecho swore authoritatively at the mules to make them behave. Then came the excruciating business of easing ourselves into our saddles, and we were off.

The trail led over a ridge and dropped again into the valley at Las Moras, a scattered *pueblito* of adobe houses, each with its walls festooned with long strings of brilliant red *chilis*. A spotted pig, tied to a mesquite tree, eyed us belligerently as we rode by; a *vaquero* galloped toward us on a buckskin pony for a visit with Morquecho. Near the river, men were cutting house beams in the groves of cottonwoods. No one seemed to be in any great hurry. We followed the wagon road between fields of corn past another *pueblo*, where men looked with admiration at our new pack outfit, and women looked without admiration at us. Beyond, two bearded old men, standing knee-deep in the river, paused in their work to return our "*Buenos Días*" with dignified Mexican courtesy. A deer swam toward us from the opposite bank. I was quite excited by this novel sight—until I saw a red collar around its neck. It was a pet.

At the village of Realitos, I found a site of the "slab" type (No. 28 on map). There, we turned to the right to go up and around the point of the Sierra del Tigre to investigate some caves Morquecho said he had seen. On the top of a high *cordón* commanding a broad view of the valley and *sierras* beyond, I stopped for a picture. The town of Bavispe could be seen up the valley a few miles. From the hilltops, we descended a precipitous trail into a narrow deep cañon lined with jagged cliffs. In the bottom, cottonwoods and large mesquites and oaks grew beside a diminutive stream. Ahead, an isolated "island" of massive salmon-colored rocks flamed

in the sunlight, incredibly brilliant. Morquecho led the way, as usual, up the cañon, over divides and across more cañons. The trail was in places nearly impassable, and was everywhere extremely rough and rocky. The steep hillsides were smooth and innocent in appearance, but underneath the high grass covering them were broken granite-like rocks, cruelly sharp, fallen from low cliffs above, equally broken and equally sharp. Deep cañons alternated with rock-bound ridges in a series seemingly without end.

My new saddle, stiffer than a starched shirt, was treating me so ungratefully that I was almost ready to cry. Fortunately, we came to a place where further passage was impossible. "Here," I told Morquecho, "we sleep."

After a supper of beans, canned hominy, biscuits and coffee, Morquecho settled himself beside the fire and started talking. Tale after tale of the horses and dogs he used to have, of the guns he has for which he is too poor to buy ammunition, of his mines and the fortunes he has almost made from them, of being sent to jail for others' crimes, of hunting and of war—these and many others came from him in a steady stream of words. Far into the night he talked, until I grew sleepy and made my bed among the rocks and squirmed myself gratefully into it, too tired to hear more.

November 10.

We stayed today in the cañon, principally because of the necessity of spending a good deal of time climbing to Morquecho's caves, partly because my saddle had bruised me in many places and needed adjustment. During the morning, we went to the caves, climbing over rocks, through thick oak brush, slipping and sliding. It was hard work and very uncomfortable, to me, at least, due to the inadaptability of my riding boots to mountain-climbing.

The caves are two little shelters (No. 29 on map), unworthy of being called caves, as bare as Mother Hubbard's cupboard. In the first, I found one plain black sherd, but could see no traces of protracted occupation; in the other there was nothing. Since there is no arable land in these rocky cañons and the formations of the mountains are too hard and broken for the occurrence of desirable caves, I should hardly expect to find a cave-culture; but there may be caves used from time to time by hunters who have left some signs of their brief periods of occupation. However, to explore the range thoroughly would take more time than I have to spare, and the results would probably not justify the labor of exploration.

During the rest of the day, we occupied ourselves in camp.

November 11.

We are now camped near Bavispe, in a humid district bordering on the river. Early this morning, we broke camp and left the

sierra, getting down to the river about noon. Coming up the valley, we passed Mexicans driving burros laden with firewood packed in high arching piles over their backs. Others were returning afoot or horseback from town, bound for their respective *ranchitos*. All looked at us curiously; some were pleasant in their salutations, others surly.

Bavispe¹ is a town of about five hundred inhabitants, I should judge, built in the usual Mexican style, with long one-story adobe houses, open through to the *patio*, arranged around a *plaza*, which here is overgrown with weeds. The public buildings, of which there are a few, Bavispe being an important community, are in the same need of repair as are the majority of the residences. Lack of civic pride is apparent. Our arrival was heralded by the barking of a host of mangy dogs. A few of them were of that ugly, naked, leprous breed commonly known as "hairless dogs." Children, playing in the streets, were startled by our coming; men loafed in the shade; women stopped their work to come to their doorways as our mules shied and danced through rocky narrow streets. All stared with varying degrees of astonishment at *los gringos*. George's red hair seemed to be the major attraction.

After supper, Morquecho rode back to town on the mean mule to shop. An old man came to sell us corn for the mules, which he sent just before bedtime. George and I sat by the fire trying, without success, to pry open the hooks on the lash-cinches. Morquecho returned, laden with sugar and a shovel and a few little things. He had me count the change he received two or three times to make sure it was correct.

At some late hour of the night, I was awakened by the light of a fire burning a few yards from my bed. Near the fire stood a gaunt stranger, dressed in shining khaki trousers and a new khaki shirt. I looked again. It was Morquecho, wearing the new clothes he had secretly bought in town.

Sunday, November 13.

Yesterday, having left Bavispe and gone on to Baceraca,² where more dogs barked and more people stared, we turned southwest at the latter place and entered a cañon, which we followed up-

1. "That unfortunate village (Bavispe) has been completely destroyed since my visit, by the earthquake of May, 1887. It has a large and massive church, built towards the end of the last century, after the Franciscan order had taken charge of the missions which the Jesuits were forced to abandon. . . . Fertile lands extend in the bottom below the pueblo, but east of the river the mountains rise in steep slopes. I found painted pottery and traces of ruins adjacent to the pueblo, and at La Galerita, midway nearly between Bacerac and Bavispe." Bandelier, pps. 527-528.

2. Also spelled Bacerac or Baserac. Place names in northeastern Sonora are largely of Indian origin, having been rendered into uncertain Spanish by the phonetic method. Illiteracy is so general that little thought is given to the niceties of spelling, hence no uniform orthography has developed. C and S, preceding a vowel, are used indiscriminately, as are also B and V.

stream a couple of miles to a trail leading out to the crest of a long *cordón* that slopes gradually upward to the same Sierra del Tigre. This we followed about eight miles, over a rock-strewn trail to the rim of a cañon. Our objective was Pueblito, an old ranch where (according to Morquecho) pottery is to be found in great abundance. The trail seemed to end abruptly at the rim, leaving us high and dry—very dry. The sun was setting. George and I sat on a rock while Morquecho searched for a trail into the cañon. Mosquitos buzzed around our heads. What business they had there, I don't know. It had been dark for some time when Morquecho returned with the news that to get into the cañon was impossible. We turned about and climbed back to a flat spot in a saddle between two hills, slipping, tripping, and skinning our shins in the dark, to make a dry camp. Two of the mules were missing. Morquecho set out again to find them, swearing frightfully. Having no water for cooking, we substituted cigarettes for food, and sat by the fire engaged in gloomy conversation. Bedtime came, and we threw down in the least rocky places we could find.

Long before daylight, while all the stars were still shining, I got up and made the fire, by which I sat smoking and staring sleepily into the dark toward the sound of the bell on the old black mare. George joined me before very long. When it was light enough to see, we saddled and packed, and soon after sunrise were riding back on the trail over which we came yesterday. Two miles back, we worked our way down the hill into the cañon, where we drank cool sweet water from a trickling stream.

Our present camp is on a flat grassy spot underneath a small grove of oak trees. In the rocky *arroyo* below us, are pools of clear water; on either side of the narrow cañon, rise sheer granite cliffs. It is an attractive place, and ideally suited to camping.

At noon, when we finally ate, our appetites were enormous. After allowing a bit of time for digestion, which George and I spent in picking over a mess of beans and Morquecho in groaning (he has a cold), we went up the cañon afoot to find Pueblito, leaving George in camp to keep the beans boiling. A large white-faced bull snorted at us. We gave him the trail and went on. The farther we went, the wilder and more beautiful the narrow cañon became. In places, we climbed carefully over smooth granite boulders and worked our way through narrow gorges, carved in the solid rock by erosion, polished by the action of the water. Pools of water cast back the reflection of the boulders and cliffs, and of trees, some bright with the colors of leaves in the autumn. Once, we climbed high up the hillside in order to go on. Just below Pueblito, we emerged from a rocky gorge into a pleasant grove of oaks, and walked along the trail, through grass knee-high, past a grave, surrounded by a fence of wooden pickets and surmounted by an inscribed cross.

In an open space at the junction of three cañons, lay Pueblito—a deserted house of rough-laid stones with a fallen roof of grass thatch, a corral and a crumbling stone oven. A gnarled oak, leafless and dead, standing near the house, completed the picture of desolation. Abandonment of the ranch had probably followed a raid by the Apaches, who have wrought havoc in Sonora in times past, and still occasionally commit new depredations.

We looked for sherds, but in vain. I photographed Pueblito, and we returned to camp. Scientifically, the expedition was a failure; but, nevertheless, the afternoon was one of the most delightful I have ever spent.



The pack train on a cordón near Pueblito

November 14.

Today we stayed in camp. Morquecho had such a bad cold this morning that he was in no shape for traveling. He sat all day on a rock, with a blanket doubled over his shoulders, holding his head in his hands, suffering silently. I gave him aspirin and some laxative pills, these being the only remedies for colds that we have. George read a copy of the Saturday Evening Post that he brought from Douglas, and became irritated when he found that some of the most important pages had been torn out. I spent the morning teach-

ing the mules to eat out of nosebags, and the afternoon beating the fenders of my saddle with a stick to soften them.

It was a pleasant day, idly spent.

November 15.

Today we left the Sierra. Morquecho wanted to take the trail back to Baceraca in order to reach the valley, but I vetoed the idea. Instead, we followed down the cañon about halfway to its mouth and climbed out to the crest of a long grassy *cordón*, down which we rode to the river about three miles below Estancia. There, I found a "slab" site (No. 32 on map) and made a collection of potsherds. A young Mexican overtook us and stopped for a chat with Morquecho. He said that a hundred and fifty yards above the ranch at Pueblito there is a site with decorated pottery.³ Morquecho swore vigorously when he heard it.

At Estancia, where the Río de Huachinera, a small stream, joins the Bavispe, there is a cluster of adobe ranch-houses, sombre and dirty in appearance, on the point of a *mesita*. A strong young woman, one of the hardy race of Mexican mountaineers, quite different people from the effeminate town-dwellers, stood in her doorway to watch us pass. Otherwise, the ranch seemed deserted.

To the east of Estancia lies Tres Ríos, in an opening of the *sierras*, at, or near, which village there is a colony of Kickapoos (*Chicapuses*, the Mexicans call them), at one time residents of Oklahoma; to the west, the Sierra del Tigre begins to break down into hills, which continue toward the south in line with the *sierra*, losing more and more of their mountainous character. South of Tres Ríos, the Sierra de Huachinera begins: the highest (though not the longest), most imposing *sierra* in this northern district. Along its foot, on this side, extends a high flat-topped *mesa*. Looking upstream toward Huachinera, the valley, which below Estancia is so broad and open, appears to be cut off by low rolling hills.

Men were at work in the fields below Huachinera, threshing beans and winnowing them by tossing double handfuls into the air. The threshing-floors of packed earth looked smooth and clean; but I know from experience that no Mexican bean is to be regarded as being a bean until it has been proven that it is not a rock. Some threshing-floors are, no doubt, less rocky than others. Outside the bean-field fence, Morquecho and I held a conference concerning the selection of a camping-place, after which we climbed a winding hill-side road to the town. On the outskirts, George and I held the mules while Morquecho rode away in search of corn. I followed him a few minutes later, past long low adobe houses with wooden *rejas* over their windows, peering with interest into one *patio* after another.

3. Possibly the site which Bandelier calls Los Metates, about twelve miles from Bacerac, to the west or southwest. It is described in some detail on pages 524-526 of his Final Report.

One of the most charming vistas in the world, I think, is a *patio* seen through a broad arched entranceway, especially if within there are flowers and plants, and garish landscapes painted on the white-washed walls. In a dirty backyard, flaming with the ubiquitous strings of *chilis*, I found Morquecho, in the act of lifting a heavy sack of corn to his saddle, surrounded by Mexicans, old and young, to whom he was talking. One of the girls was very pretty.

From the edge of town, we took a trail, visibly worn in the solid rock by years of traffic, into the valley again and unpacked in a disused *milpa* beside the river. Here, for the first time in Sonora, I noticed junipers growing in the ravines, which reminded me of the hills in New Mexico. Rounded bluffs of coarse sandstone and the mesa above, covered with grama grass and dotted with clumps of junipers, made the resemblance complete.

Supper was finished in the dark; the breeze blew colder and colder—so cold that I dug a woolen undershirt out of my war-bag and gave it to Morquecho, who was shivering. The little mule and the old black mare nosed among the packs to locate the corn. I collected a small pile of rocks beside my bed to throw at them, should they become too bold during the night.

November 16.

From our camp in the field, we followed up the wooded Huachinera valley to a small ranch (Sipiuerachic, on the map), where we entered a waterless ravine that led us to the east toward Tesorobabi. On the narrow top of a small *mesa* half a mile beyond the ranch, I found a site (No. 33 on map) and made a sherd collection, then hurried to overtake the mules. Seeing a rather unkempt old man riding a ratty bay horse approaching me, I began to feel self-conscious and wished that the Mexicans didn't travel so much. "*Buenos días*," I said when we met. "Good morning," was his prompt reply. This so entirely threw me off my mental balance that I could think of nothing to say and sat dumbly on my horse looking at him. He, I inferred from his questions concerning Colonia Morelos (a Mormon colony), was one of those Mormons who, when the government of the United States interfered with their ways of living, founded colonies in Chihuahua and Sonora, and emigrated with their families.

As we rode by the ranch of Tesorobabi, a half-witted boy stood with his foot on a bar of the corral fence and stared at us. Two *vaqueros*, fierce-looking Mexicans, wearing large hats pulled down over their eyes, were talking in the road outside a high-walled enclosure shut in on the fourth side by the ranch-house, a solid, honestly-built structure of stone. The ranch had something of a foreign air; although it was planned and built in the most approved Mexican style, and had the usual quota of wandering chickens and burros.

It seemed too well-kept to be entirely Mexican. Through the ranch flows a small stream, coming out of a *cajoncito*, up which winds the trail to Bacadéhuachi, fed by underground springs. Toward the Sierra de Huachinera, the country is open, with, here and there, an oak tree, or a clump of oaks, thickly covered with grama grass growing knee-high to a horse. The underlying formation is sandstone conglomerate, stratified in thin layers, and gashed by an intricate network of small cañons, in each of which, apparently, there are cottonwoods and a stream, or pools, of water. It is excellent country for cattle.

Our trail dipped into one of the little *cajones* and emerged on the side of a long *cordón* which we ascended on an easy grade toward the divide between the Huachinera and the Bacadéhuachi valleys. More properly speaking, it is a series of parallel ridges that separates the valleys. Lava soon appeared and the trail became rocky. Strewn about among the rocks, were innumerable nodules of obsidian; in fact, one stretch of the trail for a hundred yards or more was so thickly covered with obsidian that the ground could scarcely be seen where passing mules had worn away the grass. Most of the nodules were not larger than a walnut; none larger than my fist. This is the Tahuaro, mentioned by Bandelier in his Final Report as being "remarkable for the profusion of nodules of obsidian contained in its lava" (Page 515).

After "jumping," as they say in Spanish, a couple of high, lava-covered ridges, we came to the broad valley in which Aribabi and Tiópari are located. The valley is about a mile and a half long and half that wide, completely encircled by hills. Through it meanders the dry bed of an arroyo. The hills are thickly covered with large oaks, a few of which trees still stand in the fields, their great size having saved them from destruction when the land was cleared for cultivation. Miles of rail fences divide the various farms, on a few of which are miserably inadequate houses of adobe and solid oak poles, through which the wind must whistle at a frightful rate during storms. But, as I have said, the Mexican mountain-folk are a hardy breed—frugal in their ways of living and well able to endure what we should call hardships. Hemmed in as they are by hills, almost completely untouched by the progressive influence of civilization, the inhabitants of the valley have become self-dependent, relying upon their fields of corn and beans, and their herds of cattle for their existence. An underground seepage of water furnishes them with never-failing protection against lean crops; thickly-growing grass and brush in the hills provide abundant food and adequate shelter for their stock—so they must be happy. Every one, at least, that I saw,—from the gnome-like bearded old men, down to the smallest child, toddling about clad in nothing more than an abbreviated shirt,—seemed cheerful and contented.

Next to the curious little old men we passed, the oddest thing in the valley was the type of house-construction that has been developed at Tiópari. The house itself is of rough masonry, with a door (doorway would be more correct) and a hole in the wall through which smoke from the cooking fire escapes. The roof is of earth, packed hard upon layers of horizontal poles and sticks. From the top of the wall on the windward side, a steeply-pitched lean-to of peeled poles thatched with grass rises to a point perpendicular to the opposite wall, where it is supported by two vertical poles. Seen squarely from the windward side, the house appears complete and the high thatched roof makes it imposing; viewed from any other angle, the effect is queer, to say the least, as though a colossal architectural error had been committed. A notched post serves as a ladder to reach the loft thus made, which provides a storage-place for surplus corn and *frijoles*.

Morquecho stopped at one of these to inquire about a camping-place. A man pointed toward a ravine where, he said, there was water. A trail led from the house up the ravine and into the oak-clad hills. Morquecho thanked the man in his politest manner ("*Muchisísimas gracias*," he says when he wants to be really polite), and turned his old mare's head up the trail. We soon passed a small spring oozing out of solid rock, which I thought was the watering-place. In the next little valley, he muttered something about the unreliability of Mexicans as guides, referring to the directions he had just received. I had a feeling that he was going to get us into another pickle, and rode down the draw to look for water, which I found in the bed of the wash. It was rather hard and had an oily scum on the surface; but it would soon be dark, so the scum would pass unnoticed. We unpacked in a little clearing nearby.

November 17.

Today we crossed more hills,—mostly lava-covered,—over rocky trails that made the mules step carefully. As we descended long *cordones* into the valley of Bacadéhuachi, the formation changed from strata of lava, badly broken and lying at all angles, as though tossed about by some gigantic upheaval of the earth, to a sort of volcanic shale of a yellowish white color; then, lower down, to sandstone conglomerate; and finally to red clay, which was deposited in a level stratum and underlies, throughout, the gravelly capping of the flat *mesitas* in the valley-bottom. Toward the east, is the Sierra de Comvirginia, or Sierra de Bacadéhuachi,—tall, steep, formidable; enclosing the valley on the other three sides are rounded hills, too low to be called mountains. The whole valley is, I should judge, ten miles north and south, by five east and west. Looking from the tops of the hills we crossed, it resembles a vast bowl, the smooth, nearly-level bottom of which is rent throughout its length by a shal-

low narrower valley, into which lead small lateral *cajoncitos*. The longitudinal valley contains the Río de Bacadéhuachi, which at the northern end is merely a dry, rocky *arroyo* with a few pools of water,—in reality a non-functioning branch of the real *río*, which has its source at springs in the southwest corner, as it were, of the bowl, and flows eastward past the town of Bacadéhuachi, where it turns south and soon enters a narrow gap in the hills. Alongside the arroyo, at the foot of the *mesitas* are fields cultivated by the people of the town and by ranchers of lesser estate who live in diminutive adobe houses on their land.

Everywhere, there is a profusion of mesquite; and on the slopes of the rocky hills are numerous clusters of *pitalla*, a cactus that resembles *saguaro*, in a way, but has long slender branches growing more or less vertically from a common root, instead of the saguaro's thick trunk. It is not an unattractive plant, but the abundance and the sharpness of its thin black "needles" make it a perfectly worthless one—except for scenery. Another desert plant I have not seen before is a weird tree with writhing branches that taper toward the end, and strong thorns, like those of the *ocatilla*, growing out of yellow, flaky, transparent bark.

At the first pool of water in the bed of the *río*, we stopped and made camp in a little clear space in the brush. A *ranchero* came to offer us his *milpa* for pasture, which I rented for the night at twenty *centavos* per animal. He, like all the other people of the valley that we met, treated us with the utmost cordiality and goodwill. Here, every face is an honest one, which cannot be said of the lowering features of many of the people farther north, who enjoy (I believe I am justified in using the word, literally) an unsavory reputation.

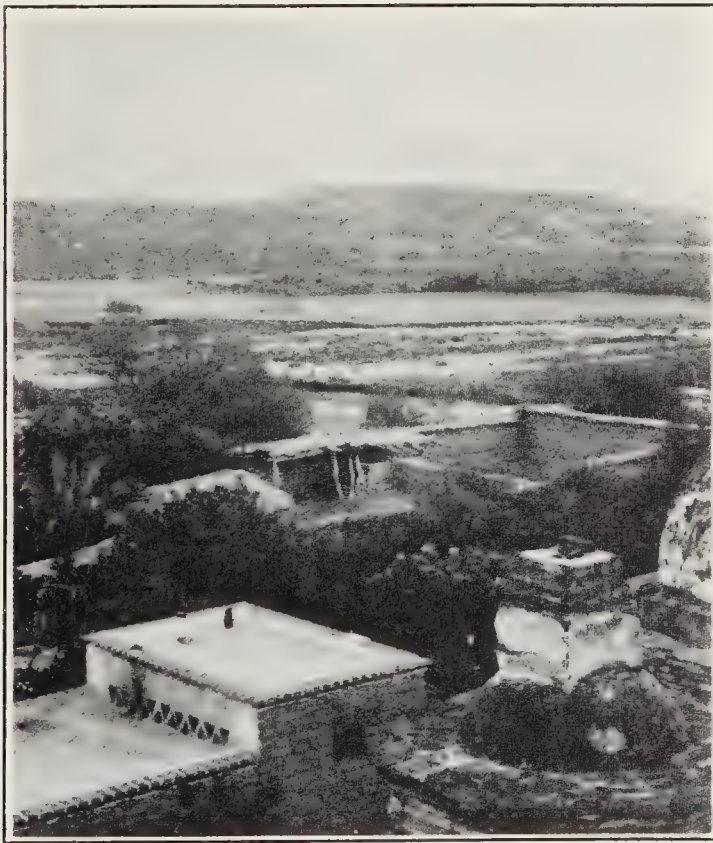
After supper, a relative of the *ranchero*, a hearty simple soul, rode up in search of a lost burro packed with a good load of corn. Morquecho's invitation to stop and smoke a cigarette and talk a bit was readily accepted (no one can resist Morquecho when he wants to talk), and the poor burro was left to wander, or to fall, perhaps, under its heavy load and remain unfound in the thick mesquite. They sat by the fire until it died,—long after George and I had gone to bed,—the younger man listening with unconcealed admiration to Morquecho's tales of mines, and punching cattle in the good old days, and hunting.

November 18.

Our friend, don Cristóbal Valencia by name, owner of our cornfield, came to camp early this morning, before we had finished breakfast. With him I went to see a site up the valley (No. 34 on map). We climbed the point of a *mesita* that stands as an elevated peninsula between the *río* and the Arroyo de San Francisco. Sherds were scattered profusely along its narrow crest. Here and there were outcropping lines of stones, indicating the positions of ancient

houses, probably constructed of brush, long since fallen and rotted away. For half a mile or so, we rode along the ridge, the whole length of which was covered with sherds, to a large group of outlined rooms at a point where the mesa broadened. We stopped to make a collection and to photograph one of the rooms; then rode across the Arroyo de San Francisco to a small cave, in which there was nothing. Our conversation, as we rested in the mouth of the cave, turned to ruins in the Valley of Mexico. I praised the Mexicans and their federal government highly for the interest they take in the preservation of their ruins. He retaliated with some polite remark about the American people; and we sat there quite a while smoking and flattering each other. My diplomacy bore fruit, for, on the way back to camp, he invited us to spend the afternoon and the night at his house in town, adding that he would be glad to show me more ruins after lunch. I accepted, highly pleased by the prospect of eating a meal or two not of my own cooking.

Don Cristóbal's house is more or less exactly like every other house of the better class in Bacadéhuachi, a single row of rooms



House tops and patios of Bacadéhuachi, Sierra de Bacadéhuachi in the distance, as seen from the roof of the old church

facing the street. To say that the thick walls are of adobe is needless, since in speaking of the majority of North Mexican houses, that goes without saying. It is pierced in the middle by the *zaguán*, through which people and horses, and various other animals, enter from the street when the heavy double door is open. The inner wall is arched over the entry. On either side of the stone-paved *zaguán* is a doorway opening into a room. The one on the right is a bedroom and contains, besides the bed, an *olla* of local manufacture filled with cool water from a little stone-lined ditch running down the street outside; a half gourd from which the water is drunk; and various cheap, highly colored pictures of *santos*, without which no Mexican housewife would live for a minute. The room on the left contains corn-fodder and is kept securely locked. Back of the house is a large corral, enclosed on the other three sides by an adobe wall, upon the top of which has been placed and weighted down with loose earth, a thatching of grass to prevent erosion. This thatching gives the wall an odd whiskered appearance.

The kitchen, a mere shelter for the mud stove and the scant culinary equipment, was constructed by building a wall of adobe out from the corral wall and placing poles horizontally from the top of it to a few vertical posts beside the wall of the house and covering them with brush and earth. However crude it may be, it serves its purpose admirably, and being open on the fourth side, the smoke from the stove has plenty of room to go out, thus providing good ventilation. This kitchen is fortunate in having two mills—one for corn and one for wheat. The former is a scoop metate, operated by Mrs. Valencia; the latter is a ponderous affair consisting of two thick circular stones placed one upon the other with their grinding faces opposed on a horizontal plane. The wheat-mill, when in use, is operated by a little boy, who grasps a short, thick, horizontal bar, attached at one end to the upper stone, and walks around and around in a circle pushing it.

Diagonally across the corral, is a small pen of brush, used to confine stock at night to prevent their disturbing the household. Near the middle of the corral stands a shed of poles, which is only partly covered by a plank and a pole or two. Its use, I can't imagine; we use it as a hitching-rack. Behind the kitchen, there is a pig that wallows in a mud-hole and pulls at the chain on its forefoot. We are sharing the corral with sundry chickens and dogs, and a wee moth-eaten kitten, so young and so poor that it can barely move.

On our entrance through the back gate of the corral, a covey of women, ranging in age from four to forty, dressed mostly in dull black muslin, collected in the *zaguán* to see us. They are the wife and the sisters-in-law of don Cristóbal. The only male person in the establishment, excepting the master of the house, is a wistful, bare-footed little boy of eight or ten years. Don Cristóbal teases

him and asks him whether he would like to go with us. He says, no, he wouldn't. The women are, with a single exception, chubby persons with light olive complexions, sparkling black eyes and turned-up Irish noses. They seemed rather frightened at first, but are getting used to us.

We watched hungrily as preparations for lunch went forward in the kitchen. Morquecho was unusually silent until the table was brought out, a cloth laid and the food produced, during which operations he enlivened progressively. Don Cristóbal, prompted by his buxom wife, brought for us soap, towel and wash-basin, which he set carefully upon a home-made chair. George and I washed. "*¿Y usted?*" don Cristóbal said to Morquecho. "No, thanks, I have a cold." We sat down to an excellent meal of fried eggs, onion soup with bits of white cheese floating in it, dried meat, frijoles, baked squash, corn *tortillas* and potent black coffee. Morquecho fell to with more than his usual gusto, and talked steadily during the meal. His tale of how he lost his upper set of teeth was short but amusing—one night they fell out while he was asleep and he swallowed them. He was in extraordinarily good form, and by the time he had finished his last *tortilla* and leaned back to light a cigarette, his reputation as a man of the world was established. Everywhere we go, we are well received—chiefly, I am sure, because of Morquecho's intriguing palaver.

We took advantage of don Cristóbal's absence after lunch to buy a few supplies, and upon his return, he and I rode out to another site (No. 35 on map) of the same type as the one we visited this morning. On the way, we passed a rectangular enclosure of stones resembling a heavy house foundation built diagonally upon an old "slab" house. The pottery, of which there was not a great deal, was of the usual plain wares (probably associated with the "slab" house), plus modern plain (a coarse smoky red ware with dark core) such as the people of Bacadéhuachi make today of the red clay in the valley, and a sherd having yellow base and broad-line brown decoration interior and exterior. Don Cristóbal said that the later house was once an Opata dwelling, occupied in historic times, the Opatas having at one time been numerous in this district.⁴

Having completed our archæological investigations and returned to town, don Cristóbal suggested visiting the church. I hastily gathered together my photographic outfit, and was soon ready to go. He pointed at my heavy clanking spurs and shook his head. I, rather embarrassed, took them off, with the mumbled excuse that "I was so accustomed—" He and George and I went out to the *plaza*, where I photographed the church, and then entered its high

4. Bandelier was "everywhere emphatically assured that all the remains along the Sonora stream were those of Opata villages" (page 489), and he cites early Spanish travelers in the region who mention the villages found by them, the houses being made of poles and thatch, with stone foundations.

arched door, hats in hand, as silently as we could. Being totally ignorant of ecclesiastical architecture and adornment, I can describe the interior only by saying that it, like the exterior, was white-washed and contained highly-colored images of saints, before one of which, I believe, candles were burning. We climbed a dark treacherous *caracól* stairway and emerged within the base of one of the two circular towers, whence we could see the *plaza*, the housetops and *patios* of the town, the broad valley with its surrounding hills, and the Sierra de Bacadéhuachi, now sharply relieved by the warm light of the setting sun. Below us, children were playing; old men sat on the low terrace in front of the church and craned their necks to see us; girls laughed and giggled as they picked over a pile of half-ripe oranges from the municipal orange trees. In the center of the *plaza* stood a tiny bandstand, neatly made of wood, set upon a hexagonal substructure of bricks, where the town's brass band plays on Sunday nights, while, I suppose, the populace, dressed in its very best clothes, promenades on the surrounding walk of earth bordered by straight lines of white-washed stones. Around the whole runs a wire fence, neat and new, like the walk and the little *kiosko*. The townspeople are very proud of their *plaza*, as well as of their fine old church,—and well, indeed, they might be.

A few bronze bells, as old, no doubt, as the church itself, hung in narrow arched openings in the towers, suspended from rough sticks embedded on either side in the masonry. A frayed hair rope was tied to the clapper of one of them. We descended a short flight of steps to the solid brick roof to photograph the town. A few boys stood about silently and watched us. In the *plaza* below, a man leading (or attempting to lead) a squealing pig stopped to pose for his picture, amid shouts of glee from everyone. Inside the church again, we stood for a moment in a gallery over the entrance for a final view of the interior. Women knelt on the bare brick floor facing the altar, their heads covered with black mantillas, their lips moving in silent enunciation of their prayers. We climbed carefully down the *caracol* and walked out as quietly as we could with our high-heeled boots. I was glad I had left my spurs at home.

The church, so I was told, was built in 1562 by the Jesuits. (Some say it is older).⁵ Although it is small, in comparison with

5. Lumholtz gives interesting testimony on this point: "While inspecting the church Professor Libbey discovered that one of the holy water fountains or stoups was a piece of great antiquity, and we were informed that it had been dug up from the debris of the ancient temple when the foundations for the present building were laid . . . The vase is a most valuable relic of prehistoric Mexico, not only as a masterpiece of ancient art, but still more as a way-mark or sign-post showing the trend of Aztec migrations." (Lumholtz, page 18.)

Bandelier says (footnote, page 508) that "the present church of Bacadéhuachi is a remarkable structure, but it dates from the closing years of the past century (the 18th), when the Franciscans had charge of the former Jesuit missions. Remains of the old Jesuit church still exist and I was informed that it contained two stone idols of ancient make."

most of the old churches, here it is considered very large, and, indeed, it does stand out conspicuously amid the flat-roofed one-story houses. Throughout, it is constructed of locally made brick and mortar, coated inside and out, as I have said, with lime whitewash. At the present time, it is badly in need of repair, a recent earthquake having shaken down the upper portion of its towers and made a large crack over the doorway. The primitive simplicity of its construction makes it attractive, even in its present state of dilapidation. The people of the town intend, some day, to restore it to its original condition.

Supper was eaten in the open corral by the light of a lamp, which the women later borrowed to say their prayers before the *santos* in the bedroom. Morquecho, moved, perhaps, by their devotion, talked of God and the futility of living. "*Con facilidad entramos en este mundo; más fácilmente salimos. La vida es un sopolo*"⁶—and so *ad infinitum*.

November 19.

It was bitterly cold when we crawled, shivering, out of bed long before sunrise, and walked about the dark corral to keep ourselves warm while we waited—hours, it seemed—for breakfast. When the sun hesitantly peeped into the corral, we were in line with our backs to the adobe wall, feeling almost as miserable as though our resemblance to doomed prisoners awaiting a firing squad had been reality. Don Cristobal soon called us to breakfast. We ate great stacks of *tortillas* and drank cup after cup of steaming coffee. Morquecho asked my permission to have his hair cut—an outlandish request at that time of day, but I had to let him go. Accordingly he hurried away as soon as he finished eating, and George and I left the imagined warmth of the kitchen to pack.

One of Morquecho's newly-made friends arrived with samples of ore for him to diagnose. He, when he finally returned from the barber's shop, solemnly pronounced them to be something or other, and began talking. I had to stop him, or we should certainly have been there yet. As it was, it was late in the morning when we threw the last hitch, thanked Mrs. Valencia for her hospitality and rode through the *zaguán* into the street. Don Cristóbal accompanied us half a mile out of town to show us the way.

The road soon entered the winding cañon of the Río de Bacadéhuachi and followed down the shallow stream, crossing it at frequent intervals. Towering cliffs of brown-red volcanic stone confronted us at the bends of the cañon and hemmed us in on either side. On the less precipitous crags and slopes, grew innumerable *pitallas*. In many places, a yellow-barked tree clung to the bare rock, its roots growing into cracks for moisture and support. Open

6. "With ease we enter into this world; more easily, we leave it. Life is but a breath."

spaces at the mouths of smaller cañons afforded us brief glimpses of the extremely rough country through which the cañon runs.

A mile or two below the Rancho de San Gabriel, which is said to be three and a half *leguas* from Bacadéhuachi, we stopped to camp for the night on a level bench underneath great arching mesquites. A *vaquero* from San Gabriel, who was returning from the lower part of the cañon, told Morquecho that below here the trail degenerates into cow-paths and the going is rather hard. He advised us to go over the hills to the Nacori road, thence south on the *camino real*; but I prefer almost any sort of reasonably level trail to the heart-breaking ups and downs of mountain roads. And, too, there may be something interesting ahead of us.

At Bacadéhuachi, we made three acquisitions of major importance, viz: a lantern, two kilos of delicious white Mexican cheese, and a dog. By the light of the lanterns, bean-picking will be less laborious, less a matter of chance, and I shall be able to write more comfortably; the cheese will supplement our fare of bacon, biscuits and beans; the dog will (I hope) warn us of the approach of bandits, of which we have encountered none, although we have heard many tales concerning them. He (the dog) has no name. Morquecho suggested calling him Carajo, but Morquecho's sense of humor is in this case, I think, a little too broad. Ladies, hearing me calling the dog, might be offended. Instead, I think I shall call him Cristóbal Valencia, in honor of his former master.

Sunday, November 20.

This morning for the first time since—I don't know when—getting up at dawn was not unpleasant. The air was cool, but not cold, and there was no dew on the grass. We are getting into the *tierra caliente*, where palms grow and snow is unknown,—but we are still a long way from the tropics.

We were packed and on our way fairly early, headed down the cañon. At an opening where two other cañons join the Bacadéhuachi, I climbed to an elevated bench or terrace on the hillside, and found there a small site (No. 36 on map). Nearby, on a level promontory at the mouth of one of the lateral cañons, I found a larger one, (No. 37 on map) with well-defined "slab" rooms, a rectangular enclosure of loose stones in the center of the ruin and an abundance of decorated sherds. I made a good collection, paced off distances and sketched the ground-plan, and took a few photographs, which, unfortunately, cannot show the character of the ruin as well as they might had I been able to take them from a more elevated position. The site is identical with those I saw farther north, with the addition of the enclosure of stones.

When I caught up with the outfit, it was waiting for me. I told George that I was able to follow the mules anywhere. "In the



Opening of Cañon, Río de Bacadéhuachi

future," I said, "go ahead without worrying about me." Proud talk! Morquecho objected to my riding alone because I might be killed by someone who would hesitate to attack the three of us. Quite true.

Near the mouth of the cañon, where the Río de Bacadéhuachi joins the Río de Bavispe (Río de Granados, it is called hereabouts), we passed a cave, apparently inaccessible, perched on the face of the cliff about thirty feet above the arroyo. It was large enough for use and had a smoked roof, but appeared to be empty. I rode by, thinking "what's the use of going into it,—it's empty, anyway." Before long, my conscience pricked me. After all, there *might* be something in it. So I told George to go ahead with the outfit, and rode back, took off my boots and climbed. Inside, there was no sign of occupation, excepting the blackened roof and a faint, partially-obliterated black ring eighteen inches in diameter, inside which was a circle of dots, painted on the wall. An enormous quantity of small granular objects, which I supposed were bat guano, partially filled the cave and sloped steeply upward between its converging sides toward the rear. I climbed this talus to make a thorough investigation, my bare feet sinking into the loose guano, my hand ready to fly to my revolver in case a mountain-lion or a hiding bandit growled

at me. I felt rather like a child going upstairs in the dark. In the rear there was more guano. I sketched the painted figure, climbed down to the arroyo, pulled on my boots and rode after the mules.

The sudden appearance of the swift stream of the Bavispe surprised me. I had no idea it was so near. Following the tracks of our mules, I rode down the river-bank a few hundred yards into thick brush. The tracks disappeared where a trail started up the hillside. I went back to the water's edge, forded the stream, crossed a gravelly stretch and forded it again, this time through deep water. On the next gravelly bar, I found cow tracks, but no trace of the mules. "That's odd," I thought, "maybe they inadvertently went upstream, instead of down;" so I turned and rode back, this time going up the Bavispe above the mouth of the arroyo. No sign of anything there, as I had expected. Here and there I rode, looking closely at the ground, unable to find where the mules had gone. There I was, in the heart of a wild country inhabited only by suppositious bandits and half-wild cows—and the sun was ready to set. I thought of my boast to George, and of how unpleasant it is to sleep in a pair of saddle-blankets with an unsympathetic horse and an empty stomach for companions.

As a last resort, I rode again up the arroyo, where I picked up the tracks, then followed them painstakingly into the brush at the foot of the hill, back and down to the edge of the water. At the very brink, I noticed a mule's track. Also, I noticed an even better horse's track leaving the water,—in fact there were several horse-tracks going and coming. That puzzled me. Perhaps they had found the water too deep for the packs at the second crossing; perhaps—well, perhaps almost anything. It was evident that I had to do something and do it before dark. Therefore, I tore a leaf from my notebook, on which I wrote in Spanish, "I am going down the river, to the south," put it in a conspicuous place weighted down with a rock, and plunged boldly into the unknown waters of the Bavispe.

I was rather irritated when I found, on the second stretch of gravel, perfectly plain tracks that I had overlooked before, although I must admit that the sight of them cheered me. And farther down I crossed the queer-shaped track of the *macho's* right hind shoe, the unmistakable track that I had previously learned to look for when in doubt. And then, best of all, there was the outfit at a bend of the river—waiting for me!

November 21.

If ever I come down this river again, it will be in a boat! We forded the river sixteen times today traveling a distance I estimate to be eight miles; and we spent one hour crossing a ridge a quarter of a mile wide, in order to avoid a bad bend in the river. Each crossing was a major operation. Counting the four we made yes-

terday, we have a total of twenty crossings to our credit—and we are still in the cañon.⁷

The most fun, though, we had this afternoon, just above where we are now camped. Crossing and recrossing the river had become rather boring, when the cañon turned sharply to the right and ran between two precipitous cliffs, as high as the Rock of Gibraltar, through a sort of ridge, or, more properly speaking, a mountain. The mules scrambled over a jumbled mass of large granite boulders, barely able to get through the gap. One of them fell and had to be helped to her feet. There was no trail, of course, and the river was too deep to navigate without swimming. It was a bad place. Beyond the gap, the river immediately swung to the left and broke through the same ridge the second time. We expected another difficult barrier, but we had no trouble here. The river began to run parallel to the ridge again, and I breathed a deep sigh of relief, which was scarcely completely exhaled when it swung to the right and flowed squarely through the same ridge again,—the third time within two miles, at the most. I rode into the stream to get the lay of the land. Below, water spread in a solid sheet fifty yards wide between two cliffs as perpendicular and almost as smooth as the wall of a house. The first possible landing-place was three or four hundred yards away. "Cripes," I thought, "what now?" To climb out of the cañon was utterly impossible. We had three alternatives: to go through the gap; to go back to Bacadéhuachi; to stay where we were. Obviously the first was the only one worthy of consideration.

I rode out on a sand-bar until my mare began to sink down to her knees. "Lord help us," I said to myself, "It's quicksand!" But of course it was not, or I should have been left afoot right there. Even so, it was bad enough, and I could see through the clear water that the whole bed of the river was of the same sand. "Well, maybe we make it; maybe we don't." With this cheerful thought, I jammed my spurs so hard into the old mare's ribs that she jumped clean into the river, and we were off. By working from side to side, I was able to find the more elevated spots in the river bottom, and thus waded through the gap without getting much more than my stirrups wet. Now and then, the mare sank in the sand, and my heart sank with her, for I was not entirely free from fear of striking quicksand. I spurred her out of the water at the end of the gap and rode onto a gravelly island to photograph the outfit. The mare sank in nearly to her belly and struggled hard to keep from going down. I had gone from the frying-pan into the fire! I leaped off without the loss

7. Bandelier encountered similar difficulties in the Sonora River valley. "To give an idea of the narrowness of the defiles it suffices to state that from the Ojo de Agua del Valle, where the Sonora rises, to Babiácora, in a distance of about one hundred and twenty miles, the traveller has to cross and recross the stream more than a hundred times."

Bandelier, page 483.

of a moment; pulled her out of the bog; leaped on; crossed the head of a run to dry land; leaped off again and got my picture. The mules waded out of the water and passed me. That was that, *gracias á Dios!*

Half a mile below the gap, we camped. After building a fire and putting the beans on to boil, George and I went to a pool below a large rapid for a swim. The water seemed only a degree or two warmer than ice. Had I not needed a bath so urgently, I should never have been so foolhardy as to go into it. George swam around like a fish, enjoying it. While dressing, I noticed that the sand in the river was full of little flakes of gold; but that I thought hardly possible—it must have been fool's gold.

When we returned to camp, Morquecho surprised me by asking for a bar of soap, which I gave to him. He went down to the river and washed something—his socks, I believe. Having heard of a ruin opposite a *jacalito* similar to the one across the river from our camp, I went to the top of a *mesita*, where, sure enough, I found a ruin—one so interesting that I stayed there until it grew too dark to collect sherds. Tomorrow I shall go back to it to photograph as much of it as I can. Morquecho said it is called Pueblo Viejo (No. 38 on map).

November 22.

As soon as we finished breakfast, George and I hurried to the ruin with the camera, my notebooks and the *machete* to finish the job that I started last night. With the *machete*, we cleared two of the rooms and photographed them. A thorny bush of the cat-claw kind, which here grows in quantities, made the clearing of the rooms painful work. Our hands were all prickled and scratched when we finished. Then followed the writing of a few notes and the collecting of more sherds, after which we went back to camp and packed the mules. Morquecho mounted his mare, and we turned again to the river.

After the second or third crossing below Pueblo Viejo we met a young *vaquero*, who was riding up river hunting a certain cow to butcher. Robinson Crusoe could have been no more surprised when he saw Friday's footprint than I was when I saw this man. My first thought was that he was lost. Morquecho soon persuaded him to abandon the cow to become our guide, of which I was glad. He called his two dogs, and we continued down the cañon—all of us excepting the old black mule. She, out of pure "cussedness," walked back to the deepest place in the river and swam to the other side.

Today we forded the river only fourteen times, making a total of thirty-four for the entire voyage. Once we went through a water-filled gap like Number Three, but not so deep.

We are now camped on a sandy flood-plain on the south bank of the Río de Aros, just above its junction with the Bavispe. Above

us, at the foot of the hill, is the *vaquero's* little ranch—a *jacalito* and a corral. Needless to say, we are glad to be out of the cañon of the Bavispe, although we are in another, which, the *vaquero* says, is even worse, unless you know the trails. Lucky for us that we met him!

When I opened the panniers that were on the black mule, I found several quarts of water in each. Even the lantern, which was tied outside, was so full of water that it sputtered languidly a few times, when I lit it, and went out. Our matches, sugar, salt, rice and cornmeal (the last two being luxuries that we saved for special occasions) were soaked. To make matters worse, a few sacks of tobacco in the pannier with the rice and cornmeal had impregnated these delicacies with tobacco-juice. I filled all the available pots with the latter, in spite of its nicotine content—and cooked it for supper, determined to salvage as much as I could.

The *vaquero* and his young brother-in-law spent the evening sitting by our smoky fire listening to Morquecho's stories. George went for a swim in the river. I, being tired, went to bed.



A watery gap above the junction of Rios Bavispe and Aros

November 23.

Breakfast this morning was not a complete success. The beans had not cooked during the night and were so uninviting that no one touched them. Instead of biscuits (there was not enough wood to bake them), we had cold cornmeal mush. The coffee was not all that it might have been. The bacon was greasy, due to the inadequacy of the fire.

We ate, however, and were away before long. The *vaquero* is guiding us, having consented to show us the way to Lampazos. It soon became evident to me that without him we should have found it almost impossible to go down the valley of the Río de Aros. The river is deep and wide, being twice as large, below the junction, as the Bavispe; the trails are hidden by rocks and brush, and the best of them are barely passable.

The day was fairly fruitful archæologically. A short distance above the junction of the river, I climbed a promontory projecting into the very stream of the Aros, where I found a small site, which was in no way unusual. From the edge of the point I photographed the valley below, which with its rocks and hills and their reflections in the expansive mirror of the placid water, made an extraordinarily pleasing picture. George called my attention to a panel of carvings on a rock below the site which I stopped to photograph. The panel is about three feet in height by one in width and is composed in a manner reminiscent of the inscribed face of a Maya stela of the Old Empire. While it is artistically, as well as geographically, far removed from anything in the Maya area, it is equally as unlike any pictographs I have seen in Sonora or in the Southwest. I am sure that the carving is not modern.⁸ A few miles down the river, where we left the valley to climb into the hills on the right, we crossed another site of fair size with an abundance of pottery (No. 39 on map). Then at the Rancho de Buena Vista on the Río de Aros at the mouth of the Arroyo de Chiticahui, we crossed a large site of the same type, and a rancher told me that there are at least three others in the vicinity.

We made camp earlier than usual in the dry bed of an arroyo below the ranch. The guide, who is a very good fellow, appropriated three large green squashes from a cornfield and bought for us at the ranch, an entire "cheese of the country" (*queso del país*) weighing all of twenty pounds. Morquecho became hilarious at the sight of so much good food, and sat on the low arroyo bank cracking his ribald jokes to an appreciative audience of young men from the *rancho*. One of them was carrying a fine rawhide lariat such as the *vaqueros* use, which I bought for ten *pesos*.

In the evening, several soft-voiced old men arrived to visit us. They, like nearly every other Mexican *ranchero* of the passing generation that I have met were gentlemen in the truest sense of the word. Their personalities, mellowed by time and the simplicity of their manner of living, lack any trace of the smart brusqueness so characteristic of the younger Mexicans; their amiable dignified

8. Both Bandelier and Lumholtz describe a group of pictographs near Granados, Sonora, known locally as the Cara Pintada. See Lumholtz, page 15, for illustration and description; and Bandelier, page 506.

courtesy, I am sure, bespeaks goodwill.⁹ Living away from the towns, deprived of churches and schools, their religion is more philosophical than dogmatic, and true wisdom, born of innate intelligence nurtured by years of observation, supplies their want of learning. The unceasing political turbulence of their country has tinged their philosophy of life with submission to the inevitable decrees of fate, but not with pessimism.

The conversation turned from ribaldry to a discussion of mines and metals. We are now, so I was told (and so it appears to me), in the heart of a region literally girt with riches. To our right, to our left, before and behind, stand mountains of copper ore, and mountains in which rich veins of silver, gold, lead and perhaps other valuable minerals await him who cares to dig them out. Mining is carried on sporadically and on a small scale by a few local people, the ore being packed on burros over the *sierras* to the smelter at Lampazos. The extreme inaccessibility of this district would necessitate the expenditure of millions of dollars in order to make mining profitable, but the returns, I should think, would be gratifying to the investor.

Our visitors, old and young, left in a body for the ranch. Morquecho and the guide scraped away the coals of a great fire of logs that they had built, dug a hole and buried the disemboweled squashes in the superheated gravel, heaping the coals over them again to insure their being well baked in the morning. Now they are sitting near the glowing mound. Morquecho is spinning long tales of mines, interspersed with accounts of amorous adventures of his youth, to the guide, who beats the fire intermittently with a stick, making clouds of sparks fly from it. George and Cristóbal Valencia have long been asleep in their saddle-blankets. My little tin lantern blinks and sputters as though it were tired of burning. Above, the stars shine clearly, suspended in the soft blackness of the firmament. A cool moist breeze blows gently down the valley, carrying with it the discontented barking of a restless dog. Another day is done.

November 24.

Thanks to the guide's lenient attitude toward property rights, we breakfasted very well this morning. The squash, thoroughly baked, was delicious—so delicious, in fact, that I put what little remained into a pot to take with us. Such good food is not to be wasted.

The visitors of last night came again to see us, and remained

9. Lumholtz speaks no less highly of these people: "It has been my lot to travel for years in Mexico, and my experience with her people only tended to deepen the pleasant impression I received at the outset. Anyone who travels through Mexico well recommended and conducts himself in accordance with the standard of a gentleman is sure to be agreeably surprised by the hospitality and helpfulness of the people, high and low, and it is not a meaningless phrase of politeness only by which a Mexican 'places his house at your disposal.'"

Lumholtz, pages 13-14.

until we were packed and ready to go. The trail led abruptly up the steep side of the hill to the west. At the top, I stopped for a last look at the Río de Aros and for a picture. We crossed a succession of small ridges to a small gently-sloping arroyo, which we followed down to the valley in which is the arroyo that runs past Badesi. The geological formations were a bewildering variety of what I took to be copper ores, thick ledges of green copper-stained stone being in the majority. I made a collection of samples as I rode along, and amused myself for a considerable time by organizing mining corporations and building railroads to exploit the treasures of the Aros. I was so busy becoming the wealthiest man in the world that I nearly took the trail leading down the valley to Badesi instead of the one north to Lampazos. West of the ridge we had crossed, the copper-stained strata gave way to ledges and hills of a hard gray stone in which veins of white meandered and criss-crossed as though they had been poured while in a molten state. Layers of brown shale standing about at varying degrees of steepness wrought confusion, and deposits of a bright yellow orelike carnotite added color to the otherwise monotonous geological array. As we climbed laboriously up the high Sierra de Lampazos, the confusion progressively subsided, until, at the top, the gray white-streaked stone became practically the only type visible.

At the Rancho de la Rosa Amarilla (Ranch of the Yellow Rose—charming name!), we stopped for the night, because of the scarcity of grass and water beyond. The guide led us past the palm-thatched stone houses of the ranch, past a corral constructed of the same solid material into another walled enclosure in the bottom of a narrow valley. Being rocky and sloping, and directly in the line of travel of cattle coming out of the hills for water at the spring in one corner, the spot was not ideally located, but there was no better place available. I was in such savage humor that when Morquecho sat down on a rock after unsaddling the mules I told him to get some firewood, which he did reluctantly. He is usually reasonably industrious. The guide immediately made himself useful by going down to the spring by the house (the water in our corral is not fit for drinking) for a bucket of water. To add to my annoyance the biscuits that I eventually baked were badly burnt on the bottom and positively viscous in the center. Then two dogs, one with a booming bass voice, the other a biting falsetto, stood outside the fence and barked at Cristóbal, who regarded them calmly. I, not so calm, threw stones at them and became quite exasperated because I invariably missed.

Our camp, in spite of its flowery name, is not wholly attractive.

November 25.

We were up early this morning and soon on our way. The sky was so cloudy that had the air been warmer, it would have rained;

had it been colder, it would have snowed. Being neither, the atmosphere was leaden like the sky. The view from the top of the *sierra*, which in clear weather must be magnificent, was worth riding weeks to see. Gaunt *sierras*, like sharp waves of a storm-tossed sea, rolled away to the eastward, ending with the Sierra Madre, greatest of them all, in the misty distance. To the north they broke into a jumble of peaks; to the south, the view was restricted by a shoulder of the mountain, but as far as the eye could reach they held their parallel formation and seemed to continue nearly due south without hint of termination. Seven *sierras* could plainly be seen, each in itself a mountain range. Looking toward the west, only two *sierras* could be seen, the more distant of the two only a few miles away.

Within an hour we were at the outskirts of Lampazos, an ugly mining town built along the bottom of a narrow valley high in the mountains. Gold and silver are mined, and smelted in a ramshackle smelter, which at the present time is inactive. The town was dirty and bore an aspect of stagnation. Here, we left the guide and rode down the valley to its mouth, whence long *cordones* led downward into the tremendous valley near the center of which lies Tepache. The slightly convex floor of the valley appeared to be a smooth plain, cut in a few places by *arroyos*, the smoothness of its surface only interrupted by a small conical hill or two near Tepache. When, after four or five hours of riding we were well into it, I saw that the plain was in reality hummocky, rather rougher than flat. A lava-flow six or eight feet in thickness covers it, totally ruining almost the whole of it for farming, although an abundance of high grass makes it the best grazing land in this part of Sonora. Beef from Tepache, according to Morquecho, is noted for its fine quality.

A pack-train of burros laden mainly with kegs of *mescal* overtook us, and with it we entered the constricted valley of the Arroyo de Tepache, a mere crack in the lava, in which is the town of Tepache de Abajo (Lower Tepache), completely hidden until the rim of the little cañon is reached. Protected as it is from cold winds, sugar-cane, oranges and plantains grow in the rich soil of the valley, watered by a small stream which below the town sinks into the gravel of the arroyo bed and disappears. Four kilometers upstream is Tepache de Arriba (Upper Tepache), boasting a post-office, telegraph, auto road to Nacozari and a church of the colonial period. Morquecho says the people are "rich and lazy." Being himself the poorest of the poor, his standard of wealth is not high; but the lower town does wear an appearance of prosperity, the houses being well-built of sound adobe and kept in good repair. The squalor and filth of most Mexican *pueblos* are not much in evidence.

We cast about for some time for a camp-site and finally chose a spot on the western rim of the valley on the trail to Moctezuma. I was coiling a pack-rope when an American woman rode up, ac-

accompanied by two Mexicans who drove her pack-mules. I was surprised, to say the least. "Gee," she cried, "it's sure good to see an American!" "It sure is," I replied. Conversation followed. She was a prospector from Nacozari on her way to the wild country six or eight days farther south to look for "samples." "My word," I thought when she told me this, "she has her nerve!" But she was armed with a competent rifle and a revolver, and looked as though she might know how to use them.

November 26.

Morquecho had trouble finding the stock this morning and we consequently made a late start. The *mescal*-train passed by before we had even started packing. Once we started, though, we struck our slow walking pace and held it steadily all day, almost without pause. The mules are beginning to fatten a little, but their backs are still so sore that to trot them would be brutal. My bay mare, on the other hand, becomes poorer and more downcast day by day. I stopped frequently today to let her graze while I looked without success for sherds. Most of the land along the trail is completely covered with chunks of lava. Grass grows thick in the bits of soil among the rocks which retain moisture long after each rain. Between the ranches of Los Charros and Paredones there is a fine level *llano* where good crops might be grown, were the supply of water in a few springs and arroyos not too meager for irrigation. Due to the absence of arable land, the valley was not inhabited in prehistoric times excepting along its western edge on the Río de Moctezuma, and possibly at a few places on the Arroyo de Tepache, beside which streams there is land for cultivation.

About noon I began to be hungry. My thoughts turned to food and I planned a meal which I was sure would be a culinary masterpiece. When we stopped on a *mesita* overlooking the *arroyo* at Paredones, I sent George to get a bucket of water and Morquecho to gather firewood, and commenced cooking. Eventually I finished, with every kettle and pan in camp full of food: beans, covered with grated cheese, stripped with bacon, baked in a pot; sweet potatoes from Tepache, likewise baked, almost afloat in a rich syrup of *panocha*; rice with raisins; biscuits; hot milk flavored with cinnamon. It was a beautifully executed meal, but failed to arouse Morquecho and George to any great degree of enthusiasm. Each dish lacked a little of one thing or had too much of something else. However, we ate as heartily as we usually do.

Afterwards, Morquecho built himself a little fire of his own and sat by it, loftily silent until bedtime. George and I spent the evening arguing by our fire about a number of inconsequential things, becoming mutually irritated.



Isidoro Ruiz Morquecho, guide

November 27.

For breakfast we had eggs from the ranch and the remains of last night's supper. Morquecho, who had gone to look for the stock, reported three of the animals missing. He saddled the mean mule and set out again, swearing mightily. George and I packed the outfit and sat down to wait. About ten o'clock, here came the mules, running as hard as they could with their forefeet hobbled, with Morquecho right behind them. His patience, needless to say, was exhausted. The mules were nearly exhausted, too.

The men we passed on our way to Moctezuma impressed me very unfavorably. They were all surly, black-visaged people, who, I thought, might belong to the horse-thief class of society. Morquecho says they are an idle lot like the Tepachenos. There is cer-

tainly no pressing need of their working hard to earn a living. The river bottom below Moctezuma is composed chiefly of rich black soil that is easily irrigated. Sugarcane and corn, the principal crops, grow so well that farming is little more than a matter of planting and harvesting. On a few farms, men were cutting cane deftly with short *machetes*. The corn in other fields is ready for picking. Crops are bountiful. If prosperity perverts a Mexican's morals as Morquecho claims, Moctezuma must be a hot-bed of nefarious schemes.

We camped on the river-bank below town where floods have washed the gravel smooth. George resaddled his horse to drag across the stream a heavy cottonwood log for our night-fire. A pleasant, jaunty young fellow stopped to make the usual inquiries about our business and to relate to Morquecho, who has lived hereabouts, the various births, deaths and marriages of the last ten years. He stayed until dark and made himself very agreeable, particularly by sending a friend who joined him to fetch cane for us from a neighboring field. There is a dance in town tonight to which he invited us, but we are much too rough and unwashed to enter a ballroom.

November 28.

On a flat-topped terrace directly above our camp, I found two adjoining sites, (No. 40 and No. 41 on map) which I investigated while George and Morquecho assembled the outfit for packing. One was of the "slab" type found farther east; the other had a small mound in which I dug and found an adobe wall. The pottery at both consisted only of plain and incised types. Apparently, they represent a culture I have not yet seen. Bandelier, in his Final Report, speaks of passing through Oposura (now called Moctezuma) and of noting the presence of decorated wares east of here, whereas farther west the pottery had all been plain. At least, this change is something new to me.

Leaving the valley, we began a long easy climb up the Sierra de Moctezuma, over the same trail Bandelier had followed coming from Baviacora in the valley of the Río de Sonora. Behind us, across the broad valley, lay the pass at the southern tip of the high Sierra de Granados, through which an automobile road runs to the towns of Granados and Guasabas, and continues eastward as a trail to Bacadéhuachi. To the north, toward Nacozari, the valley is open and the mountains scattered; to the south, near Batuco, it narrows and finally is cut off by close-set *sierras* which extend to the Río de Aros and the Río Yaqui, as the river is called below Suaqui, where its course turns sharply to the south. Below the Río de Aros, I am told, the country is hilly, rather than mountainous, but still far from level.

High in the Sierra de Moctezuma, I stopped to collect various cacti, which pricked me grievously. A gloomy Mexican passed as I knelt against a sloping rock picking out the roots of one of them with my pocket-knife, and regarded me slightly contemptuously. I felt ashamed of myself, frittering away my time, as it must have seemed, with the useless prickly things; but I had promised to bring back some "cactuses." I put them into a sack, the only available receptacle, which I tied to my saddle, and rode the rest of the day very gingerly.

The descent on the west side was abrupt. I had expected to see the Río de Sonora in the valley we entered, but it lay 'beyond still another *sierra*. This valley, which has no river and, so far as I know, no name, is ribbed laterally with cordones so nicely rounded that one might almost believe they were artificially made. Thrifty oaks fill the multitude of ravines, and are scattered over the undulating hills and ridges. Tall grass grows everywhere, tinting the entire valley a soft, almost golden, brown. Visually, it appears to be exceedingly rich pasturage for stock, but in reality the grass has little nutritional value. In favored spots, cattle find comparatively meager growths of grama, upon which they subsist.

In one of the ravines through which the trail passed, we camped near a small seepage of sweetish soapy water.

November 29.

A few miles this side of our camp at the soapy springs, we met an American cow-puncher, the second *gringo* we have seen, who is in charge of a ranch composed, apparently, of the whole of this valley. Like everyone else we have met, he thought we were prospectors. When I told him we were looking for ruins, he urged me to go to Rodéo, where, he said, the Apaches and Yaquis formerly gathered in great numbers. I was interested and promised to do so, since Rodéo lies not far out of our way. We rode on, through Bacachi, Las Lajas and Las Lajitas, all of which are ranches owned by the American cattle company, and late in the afternoon came to the abandoned ranch of Rodéo. Half a mile below the corrals and empty houses of the ranch, we found abundant water and unpacked in the bed of a dry arroyo.

Supper having been eaten in due course of time, Morquecho pointed out various places where he says there are mines and told me the history of each of them. A few miles south of here, he said, the Apaches have a mine which they work at times and guard constantly,—all of which may be true. He holds the popular belief that the ruins to be found in Sonora are remains of mining-outposts of the Aztec king, Moctezuma. As proof that the former inhabitants were miners, they say that the metates left behind when the villages were abandoned were used for grinding ore! That, I think,

is stretching the point a bit. It never occurs to them that the ancient people grew corn and ground it on *metates*, just as they themselves do today.

November 30. (Payday).

As usual, we arose this morning, cooked, ate, washed the dishes, packed and rode on our way. This daily routine is becoming slightly monotonous. Life in camp is romantic, no doubt, but to the camper it soon becomes plain hard work—a “dog’s life,” as it is sometimes called. The best part of a pack-trip begins the day it ends.

Before we packed, I rode to the top of a knoll beside the *arroyo* and found a site (No. 42 on map). Since no trace of building shows itself on the surface of the ground, although sherds are plentiful, I surmise that it was occupied by nomads, or by hunting-parties from the Sonora valley. Water and farm-land are so scarce here that I doubt whether a sedentary agricultural population could have supported itself. Nomads would have found it an ideal country for their winter camps, especially those who, after the coming of the Spaniards, had horses. Grass is abundant and the mountains surrounding the valley are full of game. From here, raids could easily have been conducted against the villages in the valleys of the Sonora and the Moctezuma. In fact, a stone fort, built on this knoll by ranchers to defend themselves against the Apaches, offers proof of the activities of raiders in recent times. Even today, isolated ranchers live in constant fear of the Apaches, whose acts of violence are a common topic of conversation. This, however, does not signify that there is an Apache hiding behind every bush in Sonora. A traveler in this country is probably in less danger of losing his life than a motorist on a transcontinental highway.

I made a collection, took a picture of the fort, returned to camp and we took the trail to Baviácora, which led us over a small *sierra* and down an interminable *arroyo* to the Río de Sonora. Like the Moctezuma river, it skirts the western edge of a broad valley. Ridges with intervening *arroyos* running down from the *sierra* we crossed occupy the greater part of it, leaving only a narrow winding strip for the valley of the river itself.

We passed the outskirts of Baviácora after the sun had set and paused near an *acequia* to decide upon a spot for our camp. The only available place was a damp arroyo bed, already occupied by the unsavory body of a dead dog. A townsman, coming to the ditch for a bucket of water, offered us his field for the night, thereby rescuing us from a dreadful dilemma. Once in the field I was tempted to leave it. It was full of sand-burs. Everywhere we stepped—especially everywhere we sat—there were any number of them.

Our landlord, who was a good soul, tore down his brush fence

to provide us with firewood, and brought us *panocha* and a sort of sorghum from his sugar mill. Then he and Morquecho sat by the fire and talked about what thieves some people are, compared with the honest citizens of Baviácora. It was like a meeting of the Society for Mutual Admiration.

Morquecho forgot his quirt when we left camp and didn't notice its absence until we were going through Baviácora on our way up the valley. "What does it matter?" he said with a careless shrug; but I knew that the whole of his worldly goods were in his tight little pack on the *macho's* back, and that what little he owns is precious to him; so I turned and rode back to the sand-bur patch, where I found the quirt. When I rode up to hand it to him, he said, "Don't you want to keep it?" He wanted me to accept it as a reward for what he considered an act of kindness. Somewhere, perhaps in the Bible, there is written something to the effect that not all wealth lies in the purse.

Beyond the town, we rode through an avenue bordered by rich orange groves, the trees laden with ripe fruit, and through the little *pueblo* of San José, where women stood in the street bargaining for slices and strips of meat that hung in an itinerant butcher's cart. As we passed, conversation ceased while the populace stared at us through windows and doorways, then started again with renewed vigor. At Estancia and above that town at a point opposite San Felipe, which lies on the opposite bank of the river, I found sites (No. 44 and No. 45 on map) on flat points of the mesa that bounds the river valley on the east. The sites at the latter place have unmistakable mounds, the washed-down remains of adobe houses—the first example of the extensive use of adobe that I have found.¹⁰ Being directly on the automobile road from Nacozari, in a fruitful valley where labor is cheap, they would be ideal for excavation, especially for a winter operation, since the climate here is very mild.

Not far from Estancia we passed a sugar-mill running full blast. In front of an adobe building in which were vats of boiling syrup, was the juice-extractor. A burro, hitched to the end of a long horizontal pole, walked slowly in a large circle, driven by a boy. Other boys tossed sticks of cane from a large pile in the yard to three men who sat in single file feeding them into the revolving steel

10. "The character of the ruins along the Sonora River as far as Baviácora may be summed up in a general picture. From ten to fifty small houses, with a substructure of rubble, irregularly scattered, and enclosures, also of rubble but not connected together, formed a village. Of what material the superstructure, the walls, and the roof were made, can only be surmised. From descriptions I judge that the walls were usually made of poles and yucca leaves daubed over with mud, and the gable roofs of yucca or fan-palm leaves supported by rafters.

"Another class of ruins shows low mounds It is difficult to determine whether the mounds were houses or not. They are composed mostly of gravel, and seem unfit for walls of any height."

rollers of the machine for which the sleepy burro supplied power. It struck me that two of the feeders might just as well have been doing something else—but that would have left the remaining man without anyone to talk to!

George held the mules in the road below Huépaca while Morquecho and I rode into the town to buy a coffee-pot, our old one having sprung a leak on the way yesterday to Baviácora. The town was in no way unusual. We had considerable difficulty in finding a pot large enough for our needs, and were ready to give up our search, when a woman brought a sizeable tea-pot she said she had bought for a wedding. I bought it from her at an outrageous price. We went back to the mules, rode on to Triunfo, and turned down to the river to camp. Half a dozen witless boys sat on their horses watching us make camp, then did movie-stunts to show us how well they could ride. We were not greatly impressed.

December 2.

I was awakened at some early hour this morning by Morquecho, who had a bad attack of coughing. Thinking that it was nearly daylight, I dressed and stirred the coals of the fire and sat by it, waiting for the dawn. Somewhere in the darkness toward Triunfo, a rooster or two crowed half-heartedly. It was very cold. I wanted to go back to bed, but was afraid that I might oversleep; so I sat smoking cigarettes, scorching my knees while my back was frozen, waiting. At last, after two or three uncomfortable hours, I mixed the biscuits by the light of the fire, and by the time it was fully light, had breakfast ready. Morquecho said that when he saw me get up at such an unearthly time of night, he thought I was sick. However, my early rising was not wholly in vain, for we were on our way again shortly after sunrise.

The road continued up the valley along the eastern side of the river, past tiny villages where the farming population lives. Here, as in the Moctezuma valley, corn and sugar-cane are practically the only crops grown. Farmland is rich and abundant, and irrigation an easy matter. The whole valley looks very prosperous, and the people seem cheerful and contented. Travelers on the road invariably greeted us with decent cordiality. An old man sitting in the door of a ranch-house above Banámichi fed Cristóbal with *tortillas* when he went snooping into the yard, instead of chasing him away. Morquecho's observation on the demoralizing influence of prosperity seems untenable.

At Ojo de Agua, I found another site (No. 46 on map) that should be excavated. On a broad level mesa above there, where I expected from the appearance of it to find a large site, there were a few scattered sherds, but I could locate no trace of houses. I did find, though, a particularly vicious kind of cactus with waxy yellow

spines. Every few steps my horse kicked a branch of it, which broke away from the stem, and capered around in distress until I dismounted to pull it out. Each time, of course, the branch transferred itself to my hand, and when I tried to flip it off, swung around to a fresh part and embedded itself more deeply than ever. I finally discovered that by using a stick to knock them off the horse's hocks it could be done painlessly. It is the awfulest cactus I ever saw.

The valley above Banámichi gradually narrowed and the farming country ended. Having made such an early start in the morning, I felt that we were entitled to an equally early stop in the afternoon. A little *rincón* west of the river, filled with mesquite and well sheltered from cold winds, presented itself as an excellent camping-place, and into it we rode. We cooked a fine supper, which included bean soup with cheese and dried peaches steamed with *panocha*, and enjoyed an hour or two of idleness waiting for the peaches to be thoroughly done. I had Morquecho sit for a picture I had promised him. He was vastly pleased with himself.

A girl, quite a nice girl of sixteen or so, in Banámichi had looked at me and run away as fast as she could, so after supper I shaved, in order to forestall any such distressing events in the future.

December 3.

I have a cold—from shaving, no doubt.

In the valley again, we soon passed an "island" standing on the edge of the stream, upon which I rode to look for a ruin, but was disappointed. Farther upstream, I climbed to the top of a *mesita* and was again disappointed. The scarcity of arable land must, in prehistoric times, have made living in this part of the valley, which is quite narrow, impossible to a large number of people, just as it is today. In fact, I believe that the prehistoric population of the parts of Sonora I have seen could be very accurately estimated by basing the calculation upon a count of the present inhabitants. The density of population runs fairly consistently in proportion to the amount of cultivable land available. It is probably true that every piece of ground that is farmed today was farmed (and by almost identical methods) in prehistoric times, and *vice versa*.

Just below Sinoquipe, we came upon a site, (No. 47 on map) which I stopped to investigate. The theory of population that I have propounded was not violated, for at Sinoquipe the valley broadens slightly, providing land for farming. We went by the town without stopping, and soon entered a cañon which runs north through the hills. At its mouth, the conglomerate formation that runs through the lower valley was checked abruptly by rough hills of dark stone

in which appeared patches and ledges of brightly colored ores—green, red, yellow, brown, gray, and various shades of these colors. The thick layer of conglomerate, which was compact gravel rather than stone, lay perfectly level, apparently laid down during the course of countless years by water, perhaps an immense lake, in which the range of hills must have stood as islands, for, a few miles farther up, the conglomerate reappeared at the same level. As we continued north, the cañon narrowed until it was little more than a cliff-lined gorge, through which flowed the diminished stream of the Sonora River. Modern farmers have built miles of irrigation canal of masonry against the cliff, in places literally pasted to the face of the rock.

It was nearly dark when we arrived at a ranch below Bámori where Morquecho rented a cornfield for pasture and camping-place. Wood was scarce and water distant, but we welcomed a chance to stop. Outside the field, young couples passed horseback on the road, the girl sitting sideways in the saddle, the boy behind, holding on for dear life. I don't know whether they were a-courting or just a-traveling, but it looked rather like the former.

The owner of our cornfield came while we were eating breakfast to collect his bill against us—one *peso*. I thought that was pretty cheap. Morquecho began a dissertation on the merits of sandy soil for raising "roots," and became so absorbed in his subject while George and I were packing the mules that he was not very helpful.

Beyond Bámori, we passed a number of not too cordial men riding down the valley and were soon within view of Arizpe, which lay a mile beyond an isolated hill standing in the middle of the flat valley-bottom. I climbed the hill and found a ruin (No. 48 on map) that had once crowned it, but is now itself crowned by several crumbling adobe houses constructed of earth upon which the ancient houses had stood. An old man watched me make a collection from the cover of thick brush near the largest house. I felt like a thief caught in the act of stealing and hurried to finish my job; then snapped a picture of Arizpe with its tall slender tower and shining white-washed buildings, and rode away. Above the town, the valley ended, the river, scarcely larger than a fair-sized arroyo, coming out of the hills to the right. A few miles above the mouth of the small valley through which it ran, a *vaquero* joined us and rode along talking with Morquecho. Later he took me to a ruin which was of the Sonora valley type, going out of his way to do so (No. 49 on map).

A mile above a ranch that I believe is called La Cueva Santa, we turned due west into a narrow rocky cañon. This we followed until we found a sheltered spot, where we unpacked. The weather is getting so cold that we choose our camp-sites with care.

We were preparing to go to bed when Cristóbal spied a skunk

next door, as it were. That, of course, upset everything. The next few minutes were filled with excitement and—well, odor. The dog made a dive for the skunk, which immediately became active. George heaved a rock that caught Cristóbal in the ribs and brought him out of the bushes yelping. Morquecho then walked into the bushes, searched a moment, threw a few rocks and presently emerged carrying the unconscious animal by its bushy white tail, as unconcerned as a dog with a bone in its mouth. He stamped on its head a few times, and carried it a short distance down the *arroyo*, and threw it down, assuming, I suppose, that the wind will not blow up the cañon. Cristóbal, in the meantime, was rolling in the sand, having discovered that he had come out of the fray with somewhat of a stench about him. He came to me for sympathy, but I had none for him; he tried George, who treated him coldly, though distantly sympathetic. Morquecho spread one of his little deerskin for him on the ground near his bed. I really don't believe he can smell—if he can, he's a better man than I am!

December 5.

Pungent reminders of the skunk-fight still floated about this morning. We were all relieved to get out of the cañon into fresher air—with the possible exception of Morquecho. He likes skunks, after a fashion, because their fat makes such good liniment for rheumatism.

The trail crossed a high divide and dropped into a valley at the ranch of Huarache (or Huerachi, I don't know which is correct). Crossing it, a cold wind struck us full in the face, and we pulled our thin jackets more tightly about us and shivered. At the ranch, I found a small site (No. 50 on map), probably a temporary camp, judging by the absence of houses, and made a collection. Thence, we rode through sheltered ravines and over wind-swept ridges, alternately freezing and thawing, until we came to Jesús María, an abandoned mining camp. As we rode, signs of copper became more and more pronounced, reaching their maximum degree of intensity at Jesús María, where the low hills show a variety of colors. Morquecho says that once this was a rich mine. Now the expensive heavy machinery lies rusting in the open; the one-time homes of the miners are slowly being reduced to mounds of stones. It is an old story in Sonora—of fortunes made, and fortunes lost.

A *peñasco*, upthrust by internal workings of the earth, forms a great wall, towering high above the desolated mine, running for miles to the east and to the west. Through it, a jagged gap gives access to the valley beyond. In a cave in the mouth of the gap near the old mine, we camped. The wind blew colder than ever. We placed the panniers end to end to form a wind-break and built a great fire on the leeward side.

Tomorrow we shall be at Nacozari, the end of our trip. The thought cheers George and me, but it has the opposite effect on Morquecho. He faces the prospect of three more chilly days taking the stock back to Colonia Oaxaca—then a long cold winter, living with charitable ranchers, or, perhaps, hunting in the mountains, alone. For three years, he says, he has had no work, other than a few odd jobs, being too old and weak to work steadily. I pity him.

December 6.

There was ice in the water-bucket when we got up this morning. A hardy northerner would probably have laughed at us as we huddled around the fire eating our breakfast—but we are not hardy northerners. Riding over the hills to Nacozari we alternately froze and thawed, as we did yesterday. The sun shone pleasantly, but its warmth was not enough to counteract the chill of the biting wind.

Before we began the ascent of the sierra beyond which Nacozari lay, we passed trains of burros going out for firewood. A young *vaquero*, with decidedly more Indian than Spanish blood in his veins, joined us and rode up the mountainside with us to his little ranch. He talked about the mining prospects he has and showed me places where there are veins of ore. Along the trail, George picked up brightly-colored samples until his pockets bulged. On the other side, the sierra seemed to be made of solid ore, mostly of a reddish tinge. We descended a winding road to the town. Across the valley a laboring engine pulled an ore-train from a mine to the great smelter, built on the steep slope of a hill.

A white-bearded feeble old Mexican met us and consented to our stopping at his house on the edge of town. There we unpacked. Morquecho stayed at the house to guard the stock; George and I went to a hotel. Later, I made arrangements for our transportation to Agua Prieta tomorrow.

In the evening, I walked up to the old man's house to pack the outfit more compactly in preparation for an early start in the morning. Inside the *jacalito*, the family sat around a gasoline tin filled with burning charcoal (their stove) listening to Morquecho's marvelous tales. Upon my entrance, the old man invited me with humble courtesy to join them and offered me his chair; but I had no time to spare. We went into the storeroom where our things were piled, and I sorted and packed the equipment while a boy held a lantern for me and the others watched from the doorway with many exclamations of wonderment as I produced things strange to them. To Morquecho, I gave the scanty remainder of our provisions. The task was soon finished and I returned to the hotel.

December 7.

George and I went to the house early this morning to bring our cargo to the garage, where, eventually (after the customary hour's delay), we loaded it into a touring car and climbed in with the driver. We bade Morquecho good-by reluctantly, sorry to part with the lovable old charlatan, and drove away.

PART II

THE RUINS

I think it advisable to warn the reader that if, in the following pages, I state that "the ruins of such-and-such a district are so-and-so," I am basing my conclusions upon the ruins I actually saw, which may or may not be wholly representative of the district. It is possible that there are to be found in the parts of Sonora (i. e. the points of concentrated occupation, principally river-valleys) I traversed, cultures of which I saw no sign, different from any cultures I found. However, this seems improbable, since the twenty-four sites I examined are so located as to represent a fairly good archaeological cross-section of the extreme eastern valleys of the northern half of the state and of a part of the valley of the Río de Sonora, at the present time the most thickly settled valley in Sonora. Between these two drainages, run the Río de Bavispe and the Río de Moctezuma, the former being sparsely inhabited today and the latter little better. Since the distance in a straight line from, say, Arizpe east to Baceraca is only eighty miles and the intervening country is not well adapted to farming, being rather mountainous, the occurrence of any unknown major culture in northeastern Sonora is outside the bounds of probability. To the east, in Chihuahua, of course, there are the Casas Grandes and Babícora cultures, separated from Sonora by the great Sierra Madre, over which their influence seeped westward.¹ What there may be west of the Río de Sonora and south of the Río de Aros, remains to be discovered. In both directions there is abundant good country for the occurrence of sites—but those regions lie outside the country under discussion.

Assuming, then, that the twenty-four sites are representative, they can be divided into two cultural classifications under which all sites in this part of Sonora can be placed. One is a peripheral development of the Casas Grandes culture, confined to the easternmost drainage (the upper Bavispe, the Huachinera and the Bacadéhuachi rivers) running as far north as the boundary of the United States, as far south as the mouth of the Bacadéhuachi and probably up the

1. Bandelier was informed of traditions indicating that the ruined pueblos of Batesopa and Baquigopa, formerly inhabited by the Opatas, "were frequently disturbed by the inhabitants of Casas Grandes, on the other side of the Sierra Madre. From Batesopa, Casas Grandes may be reached in less than five days of wearisome foot-travel, across a very rough mountain wilderness. It was also asserted that the Opatas of Batesopa in revenge made incursions upon Casas Grandes."

Bandelier, page 520.

Batesopa and Baquigopa lie east of Huachinera, in the valley of the river of that name, in extreme eastern Sonora.

Río de Granados (or the lower Bavispe), this being its western boundary. The other reaches the Río de Moctezuma (possibly the Granados) on the east; ruins westward at least as far as the Río de Sonora, probably no farther north than Cananea, where a mountain range would check it; and to the south an unknown distance. This latter culture has so little in common with the former that they were probably not contemporaneous, and are to be regarded as being independent of each other, although these are open questions. The former, I shall refer to hereafter as Peripheral Casas Grandes and the latter as Río de Sonora.²

Site 27 may be taken as typical of the Peripheral Casas Grandes culture and a description of it will serve as a description of the culture as a whole, since it is perfectly homogeneous, running true to form from this site south to the mouth of the Bacadéhuachi, (possibly, farther) both architecturally and ceramically. In architecture, it is extremely simple. Surface indications show only outcropping stones set in straight lines to form rectangular rooms averaging ten feet square. The ground-plan here is indeterminate, but judging by Site 14, east of Douglas, Arizona, on the Slaughter Ranch, which is architecturally the same, the rooms were joined to enclose a court (or more than one court) on three sides. Site 37, the southernmost of the Peripheral Casas Grandes sites I found, is so constructed, excepting that it has a wall enclosing the fourth side. The resemblance of the outcropping stones to the characteristic indications of slab-houses, led me to call them "slabs," but this is misleading. Their function was, in all probability, the same as that of true slabs, i. e. to provide a foundation for the house to permit of a weather-tight joint being made between the walls of brush or poles and the ground. That the house itself was built of wood (not of stones or adobe), cannot be gainsaid, since not the slightest trace remains of fallen débris. The rooms cover an area of about a hundred by two hundred yards, which is large, the average for this type being not more than half that.

Ceramically, this Peripheral culture is closely allied to Casas Grandes. In the collections of sherds from Site 27, plain wares predominate, constituting at least ninety per cent of the whole. Most of the plain is unslipped, reddish brown in color, some having a lighter, more yellowish tinge. Paste is coarse and the core appears dark in cross-section. Some of the pieces are of uniformly colored, slightly finer red-brown paste. There is too a ware having a maroon wash-slip. The average thickness of the plain wares is one-quarter inch. The sherds are almost all from *ollas*, but there are a few bowl-

2. Bandelier, who traversed this region in 1884, remarked the difference in pottery types in the vicinity of Huachinera from those which prevailed farther back on his route; i. e., in the Sonora River valley. Thus observers following nearly the same route, although in opposite directions and at an interval of more than forty years, bear the same testimony. See page 517.

sherds which, being crudely made, probably do not represent a typical plain-ware shape. Incised neck decorations are common, the incisions being deeply cut. One such sherd has broad bands, like the Pueblo *ollas*, with a design incised in the bands. Raked exteriors (indiscriminately scratched) are also to be found. Quasi-obliterated corrugated *olla*-sherds with dull smoke-blackened interior, which are identical with the Chihuahua sherds of that type, complete the list of unpainted wares. (This latter type was made by coiling and corrugating in the usual way, the corrugations being rubbed down almost to extinction before the paste dried, leaving an evenly pitted surface.)

Many of the sherds having painted decoration are of typical Casas Grandes polychrome and black-on-yellow wares. The local types show further development which savors of degeneration. The typical Peripheral Casas Grandes decorated pottery is black or black-and-red on a bright orange base. One sherd in the collection has black, red, and white on an orange-brown base. While the pigment of the red decorative lines is always thin and smooth, the black pigment on the Peripheral polychrome is as invariably raised by firing and usually has a burnt, roughened texture bordering very closely upon a glaze. In a few cases, the black has burned a light yellowish green, which, however, misses being a green glaze. Broad-line decorations occur, but the average line is an eighth or three-sixteenths of an inch in width, which is coarser than the linework on typical Casas Grandes and too fine to be termed broad-line.

Another ware which may represent a type is black-on-white. This, however, has more of the true Casas Grandes preciseness of linework than of the Peripheral decorative technique, and may not be of local manufacture. The black pigment is not raised nor roughened. Pastes are of medium fineness, and cores are sometimes dark, generally uniformly light brown. Jar-shapes, of which the rims are thickened and sharply curved outward, are more abundant than bowls, although the latter are not uncommon. Orange-base bowls commonly have both interior and exterior decoration, though not without exception. Bowl-rims are direct and rounded, some having black rim-painting. Where black-on-white occurs on bowl-sherds, the exterior lacks any white slip and has the brown color of the clay with an exterior decoration in black or red. This, by the way, should not be confused with any of the northern black-on-white, nor is it probable that it has any connection with any culture of the more northern Southwest.

Turning to the Río de Sonora, we have a culture which displays greater architectural variation. "Slab"-houses of the Peripheral Casas Grandes type occur, but are too much in the minority to be considered a very important type of construction, since they are almost always found in conjunction with that which may be taken



Site 46, showing double line foundation

as typical of the Río de Sonora culture. Surface indications of this show a double line of stones laid together to form a foundation a foot, or slightly more, in width. Since they are level with the surface of the surrounding ground, the houses that were erected over them must have been made of brush or poles. Rooms are always rectangular, eight by ten or ten by twelve feet in size, and, so far as I could tell, were not placed in any very definite order. Mounds of adobe at three of the Sonora-type ruins I investigated indicate that the use of that material for house-building was practiced. At Site 40, I exposed a bit of an adobe wall and found it to be made, apparently, of crudely made bricks laid in uneven courses. Excavation will be necessary to ascertain exactly the method of construction.

The pottery of the Río de Sonora can be briefly described. For one thing, it is entirely devoid of painted decoration, and of any adornment excepting a few incised neck designs and raking of some exteriors. It resembles the plain wares of the Peripheral Casas Grandes, but is somewhat coarser in texture, thicker in cross-section and redder in color. There is one type with a rubbed light red slip and another with maroon wash-slip. The balance is simply coarse plain ware, which I cannot describe adequately. Cores commonly are dark; colors range from yellowish brown to black, the latter being due to overfiring. The thickness of the bulk of the pottery indicates large pieces—*ollas* or jars. Ruins are direct, out-curving.

As might be expected, I found sites which did not belong wholly to either one or the other of these two cultures. Site 38, on the

Río de Granados below the mouth of the Bacadéhuachi is a notable example. It is located on the narrow top of a *cordón* which extends from the hills on the east into the cañon. Conjoining rooms of "slabs" built in a cluster provided living-quarters for the inhabitants. In addition there are rectangular enclosures of loose-laid dry masonry, which, judging by the fewness of the jumbled stones which mark their positions, might have been for defense, like the forts used until recently by ranchers. Other walls west of the houses provided a larger defense-compound which closed the village against attack from the hills. These piled-up walls clearly illustrate the adaptation of local material to local needs, thus freeing them from the necessity of being considered an architectural type worthy of more than passing notice. While geographically the site is barely beyond the southern limit of the Peripheral Casas Grandes culture, ceramically it is far removed, the numerous sherds being, with the exception of a single brown-on-yellow piece of indeterminate origin, much more closely related to the Río de Sonora types, if not identical with them. Incidentally, it is interesting to note the absence of quasi-obliterated at many of the ruins of the eastern drainage, especially the more southern ones, which points toward a diminution of Chihuahua influence.

Now, a few words concerning chronology, into which the ubiquitous Little Colorado red ware enters as an important factor. By its appearance at Pueblo Bonito during Pueblo 3, and its presence at other sites of the same period, its contemporaneity with that era of Southwestern occupation is assured. (Please note that in speaking of "Little Colorado red" I refer to the real *red* bowls with curvilinear hatched decoration, not to the later orange-reds nor to the glazes). This same ware, Dr. Kidder found at the Casas Grandes ruins in Chihuahua associated with Babícora polychrome, underlying the later Casas Grandes wares. This would place the Babícora culture in Pueblo 3 and the Casas Grandes culture (probably) in Pueblo 4—certainly not earlier than the latter part of Pueblo 3. Substantiation of this is offered by the pottery of Site 14, east of Douglas, Arizona, (see map) where Little Colorado red occurs with Babícora polychrome, Casas Grandes decorated being completely absent, making it more certain that Casas Grandes types postdated the Little Colorado red and that the stratification at Casas Grandes was not accidental. Here, also, at Site 14, there were one or two sherds (an insignificant percentage) of Peripheral Casas Grandes orange base, which provide a tenuous link between that site and the Peripheral culture. Since there were no sherds of Babícora polychrome or Little Colorado red at any of the Peripheral sites I investigated, while there were examples of Casas Grandes wares, there

remains little doubt that the Peripheral culture can be assigned to the latter part of Pueblo 3 (at the very earliest) or to Pueblo 4.

Assuming that this chronology is correct, and that the conspicuous absence of Peripheral Casas Grandes or Chihuahua types at the Río de Sonora sites is indicative of their occupation at a still later date, the Río de Sonora culture brings us well into the Pueblo 4 period—to the end of that period, in fact, and into Pueblo 5, since the valley of the Sonora River was inhabited in 1540 when Coronado passed through it. (Bandelier, p. 490.)

In view of the paucity of internal development manifested by the remains of these Sonoran cultures, it is safe to say that their period of existence was brief. The absence of rubbish mounds at any of the sites supports this statement. Apparently, this part of Sonora was an unpeopled wilderness until the upper Southwestern cultures reached their zenith and began to decay. Then a thin wave of population crossed the Sierra Madre from the east and settled in the valleys among its foothills, to remain a short while and disappear. Later, the Opatas, according to tradition, moved into the valley of the Río de Sonora and built the villages we have seen, and lived in them until the Spanish colonization. Short though the entire period of occupation was, it provides another opportunity for linking the prehistoric Southwest with the historic times and may eventually shed light upon the important cultures of Chihuahua.

GLOSSARY OF SPANISH WORDS AND PHRASES

acequia—irrigating ditch.

arroyo—a small stream or stream-bed.

Buenos días—good morning!

cajón—narrow cañon or valley.

cajoncito—diminutive of cajón.

camino real—highway; in the mountains, a well-traveled trail.

caracol—snail-shell; winding like a snail-shell.

centavo—a piece of money worth one-half cent.

chilis—red peppers.

cordón—a long spur, hill or ridge.

corral—fenced enclosure for keeping stock.

frijoles—Mexican beans.

gracias a Dios—Thank God!

gringo—American.

kiosko—kiosk.

legua—the distance a person horseback travels in one hour,
theoretically, three miles.

llano—plain, open grass-country.

machete—a long knife, formerly a cutlass.

macho—he-mule.

mesa—flat-topped hill or terraced country; plateau.

mescal—an extremely potent colorless drink made of maguey
(Spanish bayonet.)

mesita—a diminutive of mesa.

metate—stone for grinding corn.

milpa—field.

Muchisísimas gracias—a rather florid way of saying thank you—
literally “very, very, very much thanks.”

mulada—mule-train; pack-outfit.

ocatilla—a plant having a number of strong, spidery, thorn-clad.
sticks instead of trunk and branches.

olla—jar, pot; earthenware vessel, usually globular.

- panocha—brown sugar moulded in cakes—delicious.
patio—open space about which a Mexican house is built.
peñasco—cliff; high rock.
peón—laborer; peasant.
peso—a piece of money worth from 35 to 50 cents, depending
on the silver market.
pitalla—a sort of “giant cactus.”
plaza—open space about which a Mexican town is built; square;
public loafing-place.
río—river.
ranchero—rancher.
ranchito—diminutive of rancho.
rancho—ranch.
rincón—cove; literally “inside corner.”
pueblito—diminutive of pueblo.
pueblo—town.
saguaro—giant cactus.
santo—saint.
sierra—mountain or mountain range.
tierra caliente—hot country.
tortilla—a rubbery sort of pancake made of coarse cornmeal.
vaquero—cow-puncher.
¿Y usted?—And you?
zaguán—the Mexican equivalent of a hall; entrance.

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